

4. ISSUES AND ALTERNATIVES IDENTIFIED AND CONSIDERED

This chapter presents a discussion of the issues identified from the scoping process, and follow-up meetings, described earlier. Within each section the issue is discussed along with FWP's preferred approach (identified by the statements preceded by an *arrow* at the head of each section) and any anticipated impacts and alternatives considered. Some issues presented here do not warrant specific actions. For those issues, no preferred or alternative approaches will be offered, and there will be no impacts described. This will be followed, in Chapter 5, by a discussion of alternative future program direction for each recovery zone as well as FWP's preferred program in each area.

FWP considered a "No Action" alternative for western Montana beyond continuing existing programs and approaches to grizzly bear management. Although a "No Action" alternative was selected as FWP's preferred approach for the NCDE, because the bear population will continue to expand under existing programs, we rejected this alternative for both the Cabinet-Yaak and Bitterroot ecosystems (see Chapter 5). Full recovery in the CYE would take too long and existing programs in the Bitterroot would fail to ensure adequate preparation should bears occupy this area in the future. Thus, failure to modify these two programs would reduce the opportunity for future bear population increases and result in unnecessary conflicts and elevated risks to grizzly bears and to the people of Montana and its visitors.

While FWP recognizes that this approach deviates from formats used in many environmental impact statements, it is the agency's belief that the chosen format makes the document more useful to the public and those interested in grizzly bear conservation. Before discussing the different issues and alternatives this plan addresses, it is important to keep the following overall perspectives in mind.

- The grizzly bear is currently listed as a threatened species and covered under the Endangered Species Act. As such, recovery of the grizzly bear is directed by the Grizzly Bear Recovery Plan and implemented by the IGBC. FWP's implementation of the management outlined in this state plan will be complimentary to, and coordinated with, the Grizzly Bear Recovery Plan and the IGBC. Programs will be cooperative in nature and FWP intends to continue working with other agencies, tribal authorities and private organizations during development and implementation.
- The plan must respond to changes as they occur and be open to public scrutiny and input.
- Public support and tolerance for grizzlies is the key to their long-term recovery and re-occupation of suitable habitats. This support is contingent upon local involvement and active local participation in plan development and implementation.
- Biological and social issues are interrelated, and no one part of the plan can function effectively without the others. For example, intentionally feeding bears is against the law and people who do so create enforcement problems, unnecessary bear mortalities, risks to human safety and property damage
- This plan does not presuppose habitat problems exist with bear re-occupation, but instead approaches the issues with the perspective of making sure agencies and local people are involved and given sufficient tools to respond to management changes as the need arises.
- The key to a broader recovery lies in bears utilizing lands that are not managed solely for them but in which their needs are adequately considered along with other uses. The plan also recognizes the pivotal role private-landowner support will play in a broader recovery.
- Preventative measures are much better than simply responding to problems; however, a great deal is unknown regarding how bears will utilize some of the available habitats. Consequently, adequate responses must be available.

- Program development and implementation must be guided by the best scientific information available and continuing research needs to be an integral part of this plan. As such, the plan must be flexible in nature, allowing updated scientific data to be integrated and appropriate adjustments made over time.

A. CONFLICT MANAGEMENT

Humans and grizzly bears occasionally come into conflict in areas where they encounter one another. FWP's objective is to maximize human safety and minimize losses to property while maintaining viable populations of grizzly bears. Accordingly, preferred approaches to managing grizzly bear conflict in western Montana include:

- FWP will focus immediate conflict management action in areas already occupied by grizzly bears, i.e. Northern Continental Divide, Cabinet-Yaak, and surrounding areas.
- Major emphasis will be placed on educating people about safety measures and preventing conflicts.
- FWP will attempt to minimize the number of bears removed from the population as a result of conflict situations. This will also be the case if this population is de-listed.
- FWP will consider the actions and potential impacts of programs in Canada and Idaho when determining our response, and if they have the potential to jeopardize the population in Montana we will adjust our programs if possible to ensure the viability of our populations.
- FWP, in cooperation with land management agencies and the USFWS, will determine appropriate conflict status and response based on established Interagency Grizzly Bear Guidelines. Conflict grizzly bears will be controlled in a practical, timely, and effective manner. Location, cause of incident, severity of incident, history of bear, health/age/sex of bear and demographic characteristics of animals involved will all be considered in any management action.
- A cost-sharing program aimed at preventative work will be developed as a way of encouraging a variety of interest groups to work together with FWP to minimize problems and increase tolerance for bears.

Within western Montana, conflicts have increased as the bear population increases in both numbers and distribution. Such incidents vary greatly on an annual basis. Considering the number of people who live, work, and recreate in the region, it is important to note that overall there have been minimal conflicts. Nevertheless, conflict or "problem" bears that are not managed successfully may threaten support for the entire grizzly bear program. When bear problems are not adequately addressed, there are negative consequences for the individual bear, the public, and the reputation of grizzlies in general is damaged.

The focus of grizzly bear conflict management inside and outside the recovery zones will be predicated on strategies and actions aimed at preventing grizzly bear/human conflicts as well as providing a management framework that is quick to respond to conflicts when they arise. In addition, any management will be conservative and will continue to provide the female segment of the grizzly bear population with additional protections.

In some areas, successful cost-sharing programs are currently in place. An example is the partnership that exists between the FWP Foundation and the Wind River Bear Institute (WRBI). The WRBI receives vital support, including funding, from the FWP Foundation to implement its "Partners in Life" Program. FWP recognizes the importance of these partnerships and will continue to work to develop additional such programs.

Human Safety

Grizzly bears are large, powerful animals and, on rare occasions, can threaten human safety and life. Successful grizzly bear management will require minimizing threats to human safety to the extent possible. Accordingly, FWP's preferred approach includes the following:

- Bears that kill people in either an unprovoked or provoked situation will be removed from the population if they can be reasonably identified. If a female with cubs at side attacks and kills a person in an unprovoked situation, removal of the cubs from the population will be considered to prevent a learned behavior from being passed along. In this instance, FWP recognizes that the approach is more constrained than present guidelines.
- Bears displaying unacceptable aggression, or behavioral responses considered to be a threat to human safety, will be removed from the population as quickly as possible.
- Information on safety in bear country will be provided in all big game hunting regulations.
- FWP will seek expansion and enforcement of practical and effective attractant-storage requirements within western Montana.
- FWP will work with county governments and local garbage haulers to require and provide bear-resistant garbage containers for homeowners in bear country and erect electric fencing around transfer sites and dumps if appropriate.
- FWP will assist in educating residents about state law prohibiting feeding of bears and enforce the law when it is violated.

Threats to human safety cannot be eliminated totally. Individual bears can alter their behavior for reasons known or unknown and cause injury or death to people. People also make mistakes, which in turn can lead to conflicts with bears and increase risks to human safety. For example, one individual failing to secure human foods from bears can precipitate a chain of events that leads to a bear becoming ever more familiar with people and their dwellings. This elevates risks unnecessarily. Also, as time goes by without conflict, people can become complacent. It is through awareness of the risk, and by responding accordingly, that support for grizzlies in Montana can increase while minimizing the risks. If officials fail to respond adequately to concerns for human safety, local support for maintaining this species will erode.

As grizzly bears in western Montana expand into new habitats outside the recovery zones, they will be expanding into habitats that, in large part, are already occupied by people living, working, and recreating. With this expansion, the number of bear/human encounters will increase. These encounters could lead to injuries or death for both humans and bears.

Under Montana Statute 87-3-130 and under 50 CFR 17.40, a citizen may legally kill a grizzly bear while acting in self-defense if the bear "... is molesting, assaulting, killing, or threatening to kill a person...". In western Montana individuals acting in self-defense have killed grizzly bears. With the potential for increasing human/bear encounters, safety for both humans and bears becomes an important issue.

One purpose of this management plan is to minimize the potential for human-grizzly conflicts that could lead to injury or loss of human life, or human-caused grizzly mortality while maintaining traditional residential, recreational and commercial uses of the areas into which the grizzly is or may be expanding. There is a possibility that certain types of human use may require modification, restriction, or prohibition to protect people, individual bears, reduce conflicts, or manage critical habitats. This is the same program FWP uses for other potentially dangerous species such as mountain lions or black bears.

Although there are a variety of situations that can result in a human-grizzly conflict, the primary categories are: 1) food attractants -- improper food storage or sanitation in either a backcountry (hunter camp, hiker or other backcountry recreationist), rural (farm/ranch, cabin, church camp, etc.) or urban setting (subdivision, town); 2) surprise encounters -- bears surprised in close quarters and acting defensively; 3) maternal defense -- females defending cubs; 4) food sources -- bears defending a kill/carcass etc.; 5) human encroaching on a bear's space -- photographer and/or tourist approaching a bear close enough to elicit a defensive reaction; 6) bears responding to a noise attractant -- bears attracted to a hunter attempting to bugle or cow-call an elk, bears associating gunshots with a food source (carcass or gut pile), etc.

In summary, we acknowledge that in some instances these guidelines are more constraining than current guidelines; however this plan recommends that any bears that have killed a human be removed from the population if they can be reasonably identified and captured. While there are times where it may not be possible to determine this absolutely before management actions occur, FWP will use all available evidence from the incident to identify the bear(s) involved before removal.

Strategies to minimize or resolve human-grizzly conflict

Successful conflict management requires a multifaceted approach aimed primarily at reducing or eliminating human-bear conflict rather than simply responding to it. As such, strategies preferred to minimize or resolve human-grizzly conflicts include:

- Inform and educate the public
- Develop and enforce practical and effective attractant storage rules/regulation
- Use of deterrents and/or aversive conditioning methods
- Necessary access management
- Management control

Inform and Educate

People living, working and recreating in portions of western Montana have been exposed to grizzly bears for decades (mostly in and around the NCDE and portions of the CYE). However, in other parts of western Montana, most individuals have less experience with grizzly bears. People in these peripheral areas will initially have a much lower comfort level relative to grizzly bears. In the past, bear safety information has often been based on fear of the bear, and it is apparent that some people do fear the grizzly bear. Other concerns are based on worries that the presence of bears in new areas would reduce people's freedoms and safety while they are residing, recreating and conducting economic activities.

Ideally, fear of the bear should largely be replaced by awareness or informed respect. Respecting bears and learning how to behave appropriately when around them will help maintain positive bear encounters for both people and bears, and reduce the likelihood of negative encounters. Education is the key. Bear safety information should be based on biology and behavior of the bear, how to interpret bear behavior, and how to prevent encounters. Information should address situations that cause the majority of human-bear conflicts: bear habituation to humans, bear use of human food sources, and close encounters. Bear safety information should be of a positive, non-alarmist nature and should target specific audiences -- hunters, hikers, recreationists, rural homeowners, livestock operators, rural communities, commercial interests (loggers, miners, resort operators), and others. Community involvement is also important in developing bear safety programs. FWP, and other agencies, will work

in partnership with communities located in bear habitat to develop/promote programs that prevent human-grizzly conflicts. An example of the type of information available can be found in Appendix B.

FWP will implement information and education campaigns that may include public service announcements to alert people who live, work, and/or recreate in bear habitat when natural foods are scarce and risk of conflicts may be correspondingly high. These campaigns will emphasize the following: while there is a slight risk of injury from bears at all times, this risk is exacerbated during years when natural foods are scarce. During years of drought and poor food production, many grizzlies are forced out of secure habitat to lower elevations where they are more likely to come into conflict with people, livestock, and property (during such times, human-caused grizzly deaths are more than four times higher than in good food years). Special consideration should be given during poor food years to avoid conflicts and excessive mortalities, especially to females. FWP and other cooperators are currently implementing, and will continue to refine, a system to alert the public of higher risk of encounters during poor food years, and to redouble efforts to inform livestock operators, outfitters, and others of the need for careful conduct, including securing bear attractants to avoid problems.

Information will be delivered at FWP regional headquarters and license agents in a variety of ways including brochures, pamphlets, and guides made available to the public and via media presentations (i.e. newspaper articles, TV spots, "Montana Outdoors" magazine). Public displays and presentations (slide shows/talks presented to schools, communities, sportsmen groups, sportsmen shows, etc.) will be presented by regional information officers, grizzly bear management specialists, and other FWP staff as requested or needed to address problems which may develop. Much of this information will also be made available through the Internet via the FWP website (<http://fwp.mt.gov/default.html>). The International Association for Bear Research and Management (IBA) has produced a 50-minute bear safety video. This state-of-the-art video (*Staying Safe in Bear Country*) was written by bear biologists and is available to the public and for agency use from FWP.

Attractant Storage Rules and Regulations

Within western Montana, the USFS and other agencies (state, local, tribal) have implemented attractant storage regulations designed to minimize bear-human conflicts (Appendix C). These regulations are currently being reviewed and revised. These regulations should be applied to all public lands statewide where black and grizzly bears occur and should apply to anyone using these areas (loggers, miners, livestock operators, fire camps, mushroom and berry pickers as well as recreationists). FWP will seek to establish an MOU, or other appropriate agreement through the IGBC with the USFS and BLM, to expand the attractant storage order consistent with IGBC Guidelines (IGBC, 2005), and work to implement attractant storage orders on state and other public lands. FWP will work with the appropriate federal processes (NEPA, forest plan revisions, etc.) to assess the appropriate number and location of bear resistant food storage containers (bear boxes), meat poles, and bear resistant garbage containers (at all campsites) in order to protect bears while assuring wilderness values. FWP will involve local interests in expanding attractant storage orders to build necessary support and incorporate local knowledge and concerns.

On private land and in communities, church camps, resorts, and the like, people will be encouraged to use only bear-resistant garbage containers. In British Columbia, some communities have revised waste laws making bear-resistant garbage bins mandatory for residences and bear-resistant container enclosures mandatory for all businesses. As recommended in this plan, local groups are the appropriate avenue for addressing these concerns and developing necessary solutions. Communities will need to remain vigilant when dealing with food storage/waste storage problems. In our experience, these efforts

are very successful. However, over time people may revert to behaviors that create problems. FWP will seek support from the Fish, Wildlife & Parks Foundation, as well as other foundations, to assist with these long-term programs.

Bear Repellents and Deterrents

Over the past decade considerable effort has been directed toward the development of non-lethal techniques for dealing with problem bears. Two promising techniques are repellents and deterrents. A repellent is activated by humans and should immediately turn a bear away during a close approach or attack. The most promising repellent is a capsaicin spray (i.e. bear spray). Several brands have been developed which have been used successfully to repel attacking bears. These products are for defensive purposes only, and, to be effective must be sprayed at the bear's face (the eye area). People working and recreating in bear habitat will be encouraged to carry bear spray. Information will be available as to what repellent products are available and how to use them properly. In addition, FWP will work with various private interests to make these more readily available (i.e. cost share, etc.) and provide training on proper use.

A deterrent should prevent undesirable behaviors by turning bears away before a conflict occurs. Where removal of an attractant isn't possible, electric fencing is an effective deterrent to prevent bears from accessing human food sources and other attractants (garbage, food storage areas, livestock bone yards, etc.). Rubber bullets, hard plastic slugs, propane guns and "critter gitters" will be used to educate bears to avoid a particular area, usually when a bear is attracted to a human food source or when a bear becomes habituated to human activities. Dogs will be used to deter bears from livestock and from backcountry work camps.

Aversive Conditioning

Aversive conditioning is non-lethal bear control used as an alternative to killing or relocating bears that become too closely associated with people. Aversive conditioning should modify previously established undesirable behavior through the use of repellents or deterrents. This conditioning must be repeated until avoidance of people or their property is firmly established. Primary goals of aversive conditioning are to (i) train bears to avoid people and their activities and (ii) inform people of ways to prevent bear conflicts. In recent years, the Wind River Bear Institute (WRBI) has developed the Partners in Life Program with a goal of providing for coexistence of humans and bears by preventing and reducing conflicts. The program uses highly trained Karelian bear dogs and biologists in combination with other deterrents (rubber bullets, cracker shell, etc.) to teach bears to change their undesirable behaviors. Problem bears are conditioned to avoid human use areas and the public is educated to behave in a manner that prevents bear problems and their reoccurrence. The program has been used successfully on both black and grizzly bears in Glacier National Park, Yosemite National Park, several Canadian parks, and on private and public land in northwestern Montana and southwestern Alberta. It should be noted that aversive conditioning is not always successful, and some individual bears will still occasionally need to be removed. FWP will continue to work with the FWP Foundation to provide funding to ensure grizzly bear conservation in Montana.

Management Control

Bears may become "habituated" to human activities (ignore nearby human activity) or become "food-conditioned" (consume human food or garbage or other attractants). While food conditioned bears do not necessarily become habituated, habituated bears often lose their fear of humans and consequently no longer avoid people. More importantly, habituated and/or food-conditioned bears are most often

involved in injury or death to humans. To deal with these issues, FWP preferred approaches are as follows:

- If the bear is already habituated and/or food conditioned and is viewed as a threat to human safety, that bear would be removed (euthanized or relocated to a research facility/zoo).
- Any bear causing human injury or death while acting in a predaceous manner, will be destroyed as will any cubs at side accompanying a female.
- A bear displaying aggressive, but non-predaceous, behavior will not necessarily be removed, depending on the circumstances of the encounter and the sex, age and reproductive status of the bear.

Conflict bears that have not yet become habituated or food conditioned may be candidates for either: 1) trapping and on-site release accompanied by aversive conditioning, 2) on-site aversive conditioning without trapping, or 3) trapping and relocation. Relocation is the least desirable option; relocated bears often return or cause problems in another area and ultimately have to be destroyed. Recent data from the Yellowstone area, suggests, however, that bears that remain trouble-free for at least a year are less likely to cause future problems.

Livestock Conflicts

Livestock operations that maintain large blocks of open rangeland can provide many benefits to the long-term conservation of grizzly bears, not the least of which is the maintenance of open space and habitats that support a wide variety of wildlife, including grizzlies. At the same time, livestock operators can suffer losses from bear depredation. These losses tend to be directed at sheep and young cattle. In addition, honeybees are classified as livestock in Montana, and bears can damage apiaries. Our ability to deal with such issues will, in large part, determine the overall success of our grizzly management efforts. Correspondingly, FWP's preferred approaches to managing livestock conflict in western Montana include:

- Management efforts will be directed at depredating animals.
- Wildlife Services (WS) will be the lead agency dealing with livestock depredation (see MOU Appendices D and E) and as recovery and eventual delisting occurs, we will seek to provide them with additional flexibility and ability to make day-to-day management decisions regarding resolving livestock conflicts.
- FWP will respond to conflicts in cooperation with WS. Ultimately, with successful recovery and delisting, WS will be the appropriate agency to handle livestock conflicts and will report their activities annually, as already occurs with black bears and other predators.
- FWP, in cooperation with WS and other agencies, will focus on preventive programs aimed at minimizing livestock conflict with priority toward those areas with a history of conflict or currently occupied by bears.
- FWP will review and adjust the guidelines for dealing with damage to beehives (Appendix E).
- FWP will work with beekeepers to provide electric fences for all apiaries accessible to bears, and FWP will re-evaluate the guidelines for bear depredation to beehives and modify if needed.
- FWP will encourage private programs and funding for compensation of livestock loss.
- FWP will review the carcass redistribution program and make changes if indicated by that review.
- FWP will work with the livestock industry to evaluate the possibility of an insurance program for predator losses.

- Currently sheep and/or goats are being used for weed control. FWP will work with operators to ensure conflicts with bears are minimal through the use of herders, electric fences, dogs, or other tools as appropriate. There may be places where these programs may be inappropriate due to conflicts with bears, and FWP will recommend the use of “non-livestock” approaches to weed control in those areas.

Although livestock and bears share many landscapes in Montana, conflicts with livestock result in few bear mortalities. Currently, WS handles issues of livestock depredation, and FWP anticipates this will continue. FWP envisions the establishment of proactive collaborative working agreements with WS that focus future programs and efforts on conflict prevention where possible.

The agency envisions programs where landowners can contact FWP’s grizzly bear management specialists for assistance with assessments of risks from bears and possible preventative approaches to minimize those risks. FWP will work to provide landowners, livestock growers and beekeepers with the appropriate tools (e.g. electric fencing, aversive conditioning, guard dogs) to minimize conflicts. In addition, FWP will work with federal and tribal authorities, NGOs and beekeepers to identify sources of funding to develop programs that provide private livestock operations with additional benefits (such as priority for easements or access to other FWP programs) if they implement preventive approaches and maintain opportunities for wildlife, including bears, on their private lands and their public-land allotments. Working with other agencies and interests, the possibility of transferring grazing leases from areas of high conflicts to other areas with willing landowners/operators is another option. In this way, the program and its benefits are focused on operators who make an effort to address concerns and issues that result from the presence of grizzlies.

As a long-term goal FWP will also seek to enclose all bee yards in areas accessible to bears with electric fencing. Electric fencing is very effective at deterring both black and grizzly bears, and use of this technique can significantly reduce problems and the need to remove bears. FWP will work with the livestock industry to identify sources of funding to accomplish this. The Natural Resources Conservation Service recently implemented a new grant program to fund electric fencing in the Blackfoot Valley. They also established a standardized all-species electric fence design for fencing projects. Additional efforts will be made to identify possible funding that could be used to support staff whose sole responsibility would be to develop/implement preventative programs. These personnel should also be available to any livestock operation when requested to assess potential depredation risks and identify possible solutions prior to any depredations.

Devices to protect apiaries, corralled livestock, chicken and turkey coops, and stored feeds may be provided by FWP to property owners for protection of agricultural products. Protective supplies include electric fencing, bear resistant containers, audible and visual deterrent devices, and aversive conditioning devices. FWP may form partnerships with WS, livestock operators, NGOs and land management agencies to promote livestock management techniques that reduce bear depredations. For example, some people request that dead livestock be removed from grizzly bear areas and there are programs available to do this in parts of western Montana. While there may be times this is appropriate, there are cases within the State where livestock that died due to poisonous plants, lightening, or other causes can provide food for bears in areas away from potential conflict sites. Recognizing this, FWP has a program to redistribute livestock carcasses on the Rocky Mountain Front and the Blackfoot Valley so they remain available to bears but in areas that minimize the potential for conflict. Assisting livestock operators, and removing carcasses from areas around buildings or calving/lambing areas can minimize potential conflicts with bears. These types of programs will be evaluated for use within the other portions of

western Montana and to ensure they are functioning as desired. Conflict management will emphasize long-term, non-lethal solutions, but relocating or removing offending animals will be necessary to resolve some problems. FWP will continue to promote the development of new techniques and devices that can be used to protect agricultural products from bear damage.

At the present time, private conservation groups in Montana assist in developing preventative approaches, and FWP will cooperate with them to address this issue. Defenders of Wildlife has already cost shared the purchase of electric fence to protect sheep and bee yards through their Proactive Carnivore Conservation Fund. The National Wildlife Federation has a program to retire public land grazing allotments in areas with high conflict between livestock and wildlife from willing sellers; to date over 300,000 acres in the Yellowstone area have been retired by the Federation and other cooperators. Such cost share or cooperative programs will be a component of any long-term solutions to these issues.

In any discussion of livestock damage, an issue that is frequently raised concerns offering compensation to livestock operators for their losses to bears. While FWP encourages private groups (notably Defenders of Wildlife through the Bailey Wildlife Foundation Proactive Carnivore Conservation Fund) to continue compensating operators, the agency prefers to take the approach of providing management flexibility to landowners as a long-term solution to preventing livestock conflicts and depredation. Providing operators the opportunity to develop proactive problem solving plans to respond to potential conflicts before they develop can build support for the long-term program of increasing bear numbers and distribution. Moreover, compensation relies on verification that may not be easily accomplished in Montana's multi-predator environment. It also requires assessment of value, which can vary greatly between individual animals (for example, not every cow has the same value), and it requires ongoing funding sources. Fundamentally, however, it deals with a problem after it has occurred.

If Montana can implement a program that affords landowners management flexibility within reason to prevent livestock-grizzly conflicts and with some constraints (similar to black bears and mountain lions), FWP believes it will build broader public support. Groups interested in conservation of the bear will, however, need assurances that such flexibility will not jeopardize long-term survival or ongoing recovery prospects.

Property Damage

Bears can, and will on occasion, damage personal property other than livestock. For example, they may enter buildings, chew on snowmobile seats or tear down fruit trees. In fact, bears are highly attracted to almost any potential food source. Processed human food, gardens, garbage, livestock and pet feeds, livestock carcasses, and septic treatment systems are particularly attractive to bears near camps and residential areas, and are often the cause of human-bear conflicts. FWP's objective is to minimize, to the extent possible, property damage caused by grizzly bears.

- FWP will focus on preventive measures, including management aimed at elimination of attractants, and better sanitation measures; the agency's bear management specialists will work on these issues on both public and private lands.
- FWP will seek funding to continue the grizzly bear management specialist positions currently stationed in Missoula, Kalispell, and Choteau. The IGBC has also recognized the need to create additional positions in the Cabinet-Yaak and FWP will investigate funding positions within the Cabinet-Yaak and Bitterroot areas.

- FWP will evaluate the need for an insurance program for property damage, if bear-friendly guidelines are followed.

FWP will work to identify potential sources of attractants and will work with private property owners, recreationists, and government agencies to reduce the source of attractant with long-term resolution being emphasized and making attractants inaccessible to bears. When the attractant cannot be eliminated, FWP will provide technical assistance to protect the property and to reduce the potential for human-bear conflicts. Techniques to prevent damage may include aversive conditioning, physical protection (i.e., electric fencing), relocating or removing offending animals, and deterrent devices. FWP will continue to encourage the development of effective non-lethal damage management techniques and equipment. FWP will cooperate with city, county, state, tribal and federal governments to develop model systems of managing attractants, provide incentives for property attractant management, and pursue penalties that result in compliance with attractant storage regulations.

In FWP's judgment, the key to dealing with this issue is the same as all conflict situations in that prevention is preferable to responding after damage has occurred. Teaching people how to avoid problems is fundamental to this approach along with rapid response if damage does occur. FWP will work to keep bears from obtaining unnatural foods or becoming habituated to humans. From a broad perspective, general conflict guidelines will be followed. FWP response to property damage will, however, also include those techniques currently employed through the Partners for Life program including the use of Karelian bear dogs and on-site aversive conditioning.

FWP will use programs such as "Living with Wildlife" to further these goals. "Living with Wildlife" is a grant program developed by FWP and funded by the Montana Legislature to promote the successful coexistence of people and wildlife in urban and suburban settings. The program will fund projects that emphasize local involvement, partnerships, cost sharing, innovation, prevention, and proactive solutions to human/wildlife conflicts. Although FWP administers "Living with Wildlife", other agencies, local governments, NGOs, and private citizens will develop and implement most funded projects.

Conflict Management Guidelines

Response to bear-human conflicts is prescribed by the Interagency Grizzly Bear Guidelines. FWP follows the protocols in the Guidelines and participates in interagency consultations on responses to bear-human conflicts. FWP will continue to follow the Interagency Grizzly Bear Guidelines.

Successful co-existence and social acceptance of grizzly bears is largely dependent on prevention and mitigation of human-bear conflicts. The cause, severity, and appropriate response to human-bear conflicts often varies considerably from one incident to another, making a broad range of management applications desirable to wildlife managers. Outside of the recovery zones, greater consideration will be given to humans when bears and people come into conflict, provided problems are not the result of intentional human actions. Agency management of conflict bears will be based on risk management protocols that consider the impacts to humans as well as the impacts to the bear population, and will range from no action to lethal control. FWP will use an effective "rapid response" system for conflict bear determination and control, and will employ any technique that is legal, effective, and appropriate to manage the conflict (Appendix F).

Response Actions

1. No Action: FWP may decide to take no action when the circumstances of the conflict do not warrant control or the opportunity for control is low.
2. Aversive Conditioning, Deterrence, or Protection: FWP may employ various options that deter or preclude the bear from additional problematic activities (i.e., electrical fencing, providing bear resistant containers, securing buildings to limit access to bears, etc.).
3. Capture: FWP will initiate capture operations when other options are not applicable or where human safety is a concern. Capture efforts will be initiated when they are practical, and in a timely manner. Management agencies often resort to translocation to reduce human-caused mortality associated with problem bears. Relocating grizzly bears from human-bear conflict situations is often times a short-term solution to an immediate crisis because many bears return to the conflict site or continue problem behaviors where relocated. Survival of translocated bears is largely affected by whether the bear returned to the capture site; return rates were most affected by distance transported, and age and sex of the bear. Return rates decreased at distances ≥ 46 mi, and subadult females returned the least. Because of low survival and high return rates, transporting grizzly bears should be considered a final action to eliminate a conflict situation. However, transporting females must be considered a viable technique because some translocated females have contributed to the population through successful reproduction. Furthermore, if appropriate, captured bears will be radio collared and monitored after relocation.
4. Removal: Lethal control techniques will be employed when other options are not practical and a reasonable opportunity for removal exists.

Grizzly Bear-Human Interaction Risk Management Protocols

1. Provide conflict-avoidance information and education to people living, working, and recreating in grizzly bear habitat.
2. As appropriate, provide information to the public and land management agencies about current bear distribution, including relocations, food conditions, activity, potential and current conflicts, and behaviors (news releases, etc.). Land management agencies will be encouraged to contact their permittees with information that will help them avoid conflicts.
3. Monitor situations where the activities or behaviors of bears inhabiting areas increase the likelihood of conflicts.
4. Cooperate with livestock operators and land managers to develop strategies that minimize the potential for bear damage.
5. Cooperate with property owners, recreationists, and land managers to identify and resolve potential conflicts.
6. Preemptively relocate, aversively condition, deter, or remove bears when potential for conflict is high and other techniques are not applicable. It should be noted that preemptive moves would not be used to stop distribution increases, undermine recovery, or eliminate the need for people to take actions to avoid conflicts.
7. Relocate, adversely condition, deter, or remove bears involved in conflicts with humans, or property when other techniques are not applicable. FWP recognizes that euthanasia of bears cannot be undertaken unilaterally under current nuisance bear guidelines and will continue to work with USFWS to determine if, and when, such management is warranted.

8. Design occupancy and population objectives that reduce the potential for conflicts in specific grizzly management units.

Rapid Response Protocols

1. Within each appropriate FWP region (in this case Regions 1, 2, 3, and 4), personnel will be trained and equipped to handle conflicts.
2. Conflict reporting procedures will be made available to the public through personal contacts and a variety of media channels.
3. Appropriate state and federal agency personnel will be trained and equipped to manage conflicts under circumstances predetermined by FWP and consistent with each agency's jurisdiction and policies.
4. When appropriate, property owners may be provided with deterrent or aversive conditioning supplies for managing specific conflicts.
5. In cooperation with WS, livestock depredation information and evaluation training will be available to livestock producers and their employees.
6. Timely response by FWP for property destruction will be implemented. Management actions will be determined based on the situation.

Development and implementation of a comprehensive information and education program designed for people who live, work, and recreate in grizzly bear habitat is essential to conflict prevention. Technical assistance, including information on preventative and aversive techniques will be available to property owners, outfitters, and land managers, and will promote successful co-existence and bear conservation. Specific information and education recommendations are addressed in the Information and Education Section.

In situations where bears occupy areas where the potential for conflicts are high (i.e. some subdivisions), FWP will preemptively and actively manage grizzly bears to prevent damage and provide for human safety. In the future, should recovery occur and the grizzly bear is delisted, when applicable, killing of conflict bears by affected property owners may be allowed through special authorization from FWP. However, any such mortality will be constrained by mortality limits established for the population. FWP would direct the disposition of any bear killed under any special authorization.

Criteria for Conflict Bear Determination and Control

Active grizzly management aimed at individual conflict bears will be required as part of the management program. Moreover, FWP aims to continue to collaborate and consult with other agencies and/or tribal authorities as part of the decision making process under the Interagency Grizzly Bear Guidelines. As per Interagency Grizzly Bear Guidelines, the following criteria (see glossary for conflict bear definitions) will be used when determining the appropriate response control to implement.

1. FWP, or its authorized representative, will investigate reported human-grizzly bear conflicts as soon as practical. FWP will initiate consultation with the affected parties or their representatives within 12 hours by phone or in person if possible.
2. Bears displaying unacceptable aggression or considered a threat to human safety will be removed from the population if appropriate under the Interagency Grizzly Bear Guidelines.
3. Bears displaying natural defensive behavior will be removed when, under the Interagency Grizzly Bear Guidelines, circumstances warrant removal and non-lethal methods are not feasible or practical.

4. Bears displaying food-conditioned, or habituated behaviors, or damaging property may be relocated, aversively conditioned, or removed based on specific details of the incident as per the Interagency Grizzly Bear Guidelines. Management authorities will make this judgment after considering the cause, location, and severity of the incident or incidents. FWP will inform the affected people of the management direction chosen.
5. Bears may be preemptively moved when they are in areas where they are likely to come into conflicts with humans or their property as per the Interagency Grizzly Bear Guidelines. Conversely, people may be temporarily excluded from an area if the situation has a high risk to the public, e.g. a carcass located on a trail that is being fed on by grizzlies.
6. Bears may be relocated as indicated in conflict guidelines or as FWP, in collaboration with other agencies, determines is appropriate, especially in years where mortality may be excessive in other areas. These may include on site relocations or short distance relocations.
7. Bears involved in chronic, significant, or have a high probability to cause significant or chronic depredations, will be removed as per the Interagency Grizzly Bear Guidelines when it is practical and in a timely manner.
8. Bears relocated because of conflict activities will be released in a location where the probability to cause additional damage is low. Authorities have and will continue to cooperate to provide adequate and available sites for relocations. Bears not suitable for relocation or release will be removed as per the Interagency Grizzly Bear Guidelines.
9. If appropriate, grizzly bears captured in management actions that are to be released into the wild will be permanently marked with a unique identifying tattoo, ear tag, or identifying chip and radio collared to follow their movements.

Disposition Criteria for Bears Removed in Management Actions

Captured grizzly bears identified for removal may be given to public research institutions or public zoological parks for appropriate non-release educational or scientific purposes as per state laws and regulations. Grizzly bears not suitable for these purposes will be euthanized. FWP will direct the disposition of all parts of a bear killed for any purpose. While listed under the Endangered Species Act, any such decisions will be made through consultation and in accordance with direction provided by the Interagency Grizzly Bear Guidelines in consultation with cooperating federal agencies.

Conflict Monitoring Protocol

FWP will maintain a database on conflicts and conflict bears to assist with predicting and/or preventing conflicts before they occur. All reported grizzly bear conflicts and subsequent FWP corrective actions will be documented and summarized annually. Annual reports will detail the cause and location of each conflict and management action. This will ultimately provide managers with a means of identifying where problems are occurring and allow for comparisons of trends to be made according to locations, sources, land ownership and types of conflicts.

Alternatives Considered

The following represents a list of alternatives and issues that were considered by FWP when laying out its preferred approach to grizzly bear conflict management for western Montana.

1. *If evidence exists that a person deliberately precipitated a bear attack that resulted in their death, for example by approaching and provoking a bear, the bear should not be removed.*

Although this is considered an alternative, in FWP's judgment, allowing bears that have been known to kill someone to remain in the population will jeopardize local support and creates significant liability issues. With effective management programs there will hopefully be very few of these incidents.

2. *Livestock operators should be forced to absorb losses that occurred on public lands no matter what the cost.*

In FWP's judgment, this approach fails to recognize the significant contribution of private lands, which provide important bear conservation benefits. In fact, in many portions of western Montana these same private lands are critical to the survival of the bear and to accommodating an expanded distribution of the population. While we recognize that at times the responses on public lands may be different than those on private lands, effective programs/solutions must be available in any case. If a permittee could not manage depredation risks on public lands, the converse is allowing them to eliminate risks (meaning bears) on their private lands. This either/or approach is not a productive solution to these problems. Additionally, this approach actually significantly conflicts with the FWP objective of building public support necessary for expansion and long-term survival of bear populations.

3. *FWP should develop a livestock operator compensation program aimed at providing monetary payment to offset or replace the economic loss for a death or injury to livestock due to bear activity.*

While FWP encourages private groups to continue compensation programs, the department is currently moving away from such programs. An exception to this relates to wolf management where a citizens committee recommended some form of compensation for livestock losses. As outlined previously, we believe that if Montana can implement a grizzly bear program when the grizzly bear is recovered that provides landowners management flexibility within reason and with some constraints (i.e. some provision for removing depredating bears) it will build broader public support.

4. *Bear habitats should not overlap with human residential areas and/or other areas frequented by people.*

While FWP will address the problem of bears in residential areas with the programs outlined, to try and separate people and bears across western Montana would fail because bear distribution and densities would have to be so low that it would preclude the objective of maintaining a healthy bear population. In FWP's judgment, providing ways to accommodate both bears and people will ultimately be more successful.

5. *Provide unfettered flexibility to livestock operators and property owners to deal with conflict situations.*

This is illegal under current listed status. Furthermore, in FWP's judgment, this approach will fail to provide the necessary assurances for long-term conservation. No other FWP programs for a managed species allows for flexibility without constraints.

B. HABITAT MONITORING AND MANAGEMENT

Providing for continued expansion of the grizzly bear population into areas that are biologically suitable and socially acceptable requires regional specific information on grizzly bear habitat requirements and use, current habitat conditions, and factors affecting habitat suitability such as human activity. Consequently, this management plan recommends coordinated consulting with land management agencies on issues related to grizzly bear habitat protection, disturbance, and mitigation as well as

monitoring of major grizzly bear food sources. It is important to note that these efforts benefit many species in addition to bears. Preferred approaches include:

- FWP will work with other agencies to develop and implement a conservation strategy summarizing long-term commitments for grizzly bears in each recovery zone and other areas currently or likely to become occupied.
- FWP will work with land management agencies to monitor habitat changes in a manner consistent with its overall approaches for all other managed wildlife species.
- FWP will continue to cooperate with other members of the IGBC and the various managers subcommittees or similar group in a coordinated effort to collect and analyze habitat data.
- FWP, in coordination with other agencies, will monitor oil, gas, timber, mining and subdivision projects, and address grizzly bear needs in commenting on permitting processes.
- FWP will work with local groups to identify and promote habitat conservation that benefit bears such as maintaining core areas, security, or working with county planners in important habitat areas.

During the timeframe of this plan (10 years), grizzly bear expansion and population increase is initially expected to occur on lands in and/or adjacent to the recovery zones. Accordingly, FWP will focus its grizzly bear habitat management programs in areas that are adjacent to, and being reoccupied from the recovery zones within the NCDE and CYE. FWP will also begin to evaluate other areas that may be occupied with the ongoing expansion of the grizzly bear population and evaluate them for needed habitat conservation programs.

Habitat Security and Motorized Access

- FWP and cooperating agencies (e.g. USFS) will monitor and report on the cumulative effects of human activities on bear habitat, road access management, large scale habitat alterations, habitat easements and acquisitions, and significant Federal, State, and corporate activities as part of our program.
- Outside the recovery zones, FWP will recommend that land-management agencies manage for an open-road density of one mile or less per square mile of habitat. This is consistent with statewide approaches to management of multiple species, including elk.
- FWP will support keeping existing inventoried roadless areas in a roadless state and work with local groups and land managers to identify areas where roads should be reclaimed.
- FWP will work with the Montana Department of Transportation and the Western Federal Lands Highway Division to address wildlife crossing needs on their projects. An MOU or other agreement may be developed to provide guidelines to enhance the ability of bears and other wildlife to cross roads and reduce habitat fragmentation.

The historic distribution of grizzly bears depicts a species with wide adaptive flexibility to the habitats it resided in. Without the influence of humans, the availability of food resources and the density of bears would likely determine the distribution and productivity of grizzly bears. This is not the present case; humans and bears interact at many different levels across the landscapes. As a consequence, it is necessary to continually monitor habitat values important to grizzly bears in addition to monitoring population parameters.

Radio telemetry studies have identified roads as significant factors in displacement, mortality risk and habitat fragmentation. For example, areas of adult female displacement by roads and development totaled about 16% of available habitat in Yellowstone National Park. Moreover, the percentage of habitat

loss as a consequence of behavioral displacement from roads is a function of road density. The percentage is higher in areas having higher road density regardless of the distance at which roads affect bear behavior. In addition, bears living near roads also face a higher probability of human-caused mortality as a consequence of illegal shooting, control actions influenced by attraction to unnatural food sources, or by being mistakenly identified as a black bear by hunters.

Within the recovery zones, FWP will work with the USFWS through development of a conservation strategy to determine access constraints and requirements that need to be maintained. In addition, outside the recovery zones on public lands, FWP will seek to maintain road densities of 1 mile or less per square mile of habitat as the preferred approach. This goal seeks to meet the needs of a variety of wildlife, including species such as elk, while maintaining reasonable public access. If additional management is warranted based on knowledge gained as bears reoccupy areas, it should be developed cooperatively and implemented by local groups as suggested in this plan.

Motorized access also plays a significant role in limiting grizzly bear habitat use. The distance at which bears appear to be displaced by roads varies by area and season. Correspondingly, the impact of roads on displacement from preferred habitats is greatest in spring. Furthermore, the level of traffic also appears to influence degree of bear avoidance of roads.

Security cover is another important component of habitat. Grizzly bear habitat can be impacted by a reduction of security cover as the direct or indirect result of natural phenomena such as fire, various human activities, and land management practices, including recreational development and primary roads, restricted roads and motorized trails, human use, oil and gas development, logging practices, and forest fires.

FWP recognizes the need to minimize negative impacts to bear habitats. Other than on FWP's own wildlife management areas, FWP does not have decision-making authority on federal, State School Trust, or tribal lands. However, FWP works closely with these land management agencies to minimize negative impacts on fish and wildlife species. Additionally, FWP is considering grizzly bears in comments and discussions regarding land management activity in grizzly bear habitat, whether inside or well outside established recovery zones. Accordingly, FWP, in collaboration with other agencies, will monitor oil, gas, timber, mining and subdivision projects, and try to address grizzly bear needs by commenting on projects. Consideration and recommendations will be made based on the best scientific information available and take essential habitat requirements of the grizzly bear into account. In doing so, FWP will evaluate factors such as (i) human interaction and potential for grizzly bear mortality (ii) displacement from important habitats (iii) habituation to humans and (iv) ability of habitat to provide basic seasonal energy requirements.

FWP also recognizes that habitat changes, such as loss of whitebark pine or huckleberry crop failures, within the recovery zones could result in increased importance of habitats outside and will monitor and respond to those changes if they should occur. Likewise, there is the potential for bear habitat quality to be negatively impacted by the spread of noxious weeds. FWP believes that any such changes will be detected during the course of ongoing habitat monitoring and will respond appropriately by adjusting habitat management programs should these plants become problematic and begin impacting the bear population.

Food Sources

- If deemed appropriate, FWP, in cooperation with other agencies, will identify and monitor key food sources such as huckleberry or other berry production, moth aggregation sites, and ungulate populations.

Grizzly bears are opportunistic omnivores that are able to survive in a variety of habitats and utilize a range of foods. Major food sources utilized by bears inhabiting western Montana include a variety of vegetative foods, winter-killed large ungulates (e.g. elk, moose), and various berries including huckleberries. Existence and abundance of these food sources has been well documented in western Montana and monitoring of berry production (e.g. huckleberry, buffaloberry, serviceberry, and mountain ash) has taken place in the CYE since 1989. If scientific data indicate that monitoring of food sources is warranted, FWP, in cooperation with other agencies, will initiate monitoring of major grizzly bear foods toward berry production, army cutworm moths, and ungulate populations. If it appears that bear use of these or other food sources is threatened, threats will be addressed and monitoring protocols modified.

FWP envisions that monitoring efforts will be collaborative in nature and will work with appropriate federal, state and tribal authorities to develop programs aimed at surveying selected whitebark pine stands and identifying army cutworm moth aggregation sites using existing methodologies. Whitebark pine stands will be identified and monitored for seed production, tree health (evidence of blister rust, *Cornartium ribicola*), and evidence of bear use. Ungulate populations will be monitored using data collected during FWP annual ungulate population and trend surveys.

Private Land Development

- FWP will continue to use statewide habitat programs to conserve key wildlife habitats in western Montana. These include voluntary conservation easements and other private land conservation efforts.
- FWP will monitor categories of private land development and subdivision.
- FWP will pursue programs that deal with limiting bear access to commercial orchards.

Efforts to conserve habitats in this portion of Montana will continue to be a departmental priority due to the ongoing threat of residential subdivision. FWP promotes the use of private land habitat initiatives. Most are funded through earmarked accounts and include Montana's Migratory Bird Stamp (dollars directed toward wetland riparian areas), Upland Game Bird Habitat Enhancement Program (dollars go primarily towards enhancing habitat via good management shrub/grassland communities), State Wildlife Grants (Sec. 6) and Habitat Montana. Specifically, Habitat Montana affords FWP the opportunity to conserve habitat on private lands via lease, conservation easements (purchased) or fee title acquisition. This voluntary program is not directed at specific species but rather at conserving Montana's most threatened habitats, i.e. wetlands/riparian areas, shrub/grasslands, and intermountain foothills. Habitat Montana funds have been used to conserve habitats across western Montana.

The intermountain valleys between major mountain ranges of western Montana are primarily private land. These private lands are vital to the area's agricultural economy and provide important habitat for a variety of fish and wildlife species. As agricultural land, they also provide a wide range of opportunities for wildlife to live and travel between mountain ranges. A mosaic of major highways that bisect these valleys also characterizes the landscape. FWP reviews most subdivisions, applies land conservation programs like Habitat Montana, and works with Montana Department of Transportation on mitigating

barriers to crossing transportation routes. In addition, FWP will continue to investigate and develop programs aimed at building tolerance for wildlife, including grizzly bears, on private land. This approach, currently used for grizzly bears and other species, is very effective and will be continued.

Agricultural enterprises, such as those surrounding Flathead Lake, can also impact bears by acting as attractants. Many orchards are currently fenced to exclude deer. FWP, together with agencies such as the Natural Resource Conservation Service, can work with commercial orchard operators on development and implementation of appropriate technologies for excluding bears and minimizing property damage.

Trails

Trail use may include both motorized and non-motorized access. While programs are currently in place that address maintenance and management of certain trail systems, concerns regarding appropriate use levels and potential resource impacts (e.g. water quality, soil erosion and wildlife impacts) exist. As recreational use increases, the potential arises for grizzly bears and their habitat to be impacted from disparate outdoor activities ranging from off-road snow mobile travel to user created trail systems, developed without appropriate planning. Taking into account the wide array of outdoor enthusiasts that utilize areas frequented by grizzly bears, FWP's preferred approaches will include the following:

- FWP, in cooperation with other agencies, will consider information on trail use in areas of potential concern both within and outside the recovery zones. In the absence of good data, management programs often tend toward extreme solutions. However, if trail use creates problems only at specific times, it may be possible to accommodate use at other times. Without season and intensity of use information, FWP will be unable to make such recommendations.
- All FWP trails projects in western Montana will be reviewed by area biologists and grizzly bear concerns addressed.
- Federal trails programs are currently being adjusted, and FWP is participating in and supporting those efforts. FWP will seek USFS and BLM support of its programs and data gathering.
- Adjustments to trail access and uses should be developed using both the best available science and citizen involvement.
- FWP, in cooperation with other agencies, will evaluate snowmobile programs to ensure they avoid impacting grizzly bears during denning periods, including den entrance and emergence.

Changes are currently underway by land management agencies to address the issue of trails, trail management, off-road vehicle use, and the impact on wildlife, including bears. Many people, including sportspersons, recognize the need for change. Working with other management agencies, trails, including snowmobile trails, could be rerouted, seasonally closed, or closed entirely if impacts prove significant. Although this requires USFS planning changes, FWP, local groups and other interested parties will be active participants in the decision making process.

Effective July 1, 2001, motorized wheeled (i.e. excludes snowmobiles) cross-country travel is prohibited on National Forest lands yearlong. The purpose of this restriction is to protect riparian areas, wetlands, crucial wildlife habitat, threatened or endangered species, soils and vegetation, aquatic resources, and/or to reduce user conflicts. The policy affects any motorized, wheeled vehicle, but not snowmobiles. Under the new policy, motorcycles may use a single-track trail or road if it is open to motorized vehicles, but ATVs and other four-wheeled vehicles cannot use that single-track road or trail. Several exceptions will apply. Cross-country travel will continue to be allowed for military needs, fire suppression, search and rescue, or law enforcement vehicles in emergencies. Forest users can also drive cross-country to campsites within 300 feet of existing roads or trails, after locating their campsite in a non-motorized

fashion. As part of the decision, national forests will identify areas where more detailed local travel plans should be developed. FWP, local groups, and other interested parties should be active participants in such plans.

In conjunction with the Montana State Trails Plan, FWP has developed a Programmatic Environmental Impact Statement (PEIS) on the State's public trails system to help analyze and improve two trail grant programs administered by the department. These programs include motorized and non-motorized trail funding available through the federal Recreational Trails Program and the State Off-Highway Vehicle Grant Program. The PEIS recommends that all trail activities be coordinated with a biologist to avoid unacceptable impacts to wildlife. This course of action is currently underway because changes in technology of off-road vehicles including snowmobiles have dramatically changed use patterns on public lands. For example, with the development of more powerful snow machines and more interest in the sport, snowmobile activity is increasing. Furthermore, new technology has provided more powerful equipment that allows users to reach areas considered inaccessible in the past. Accesses to den sites that may have been inaccessible to snowmobile travel in the past now warrant investigation. These issues are being addressed, and it is FWP's intention that the needed changes to federal land management programs to meet wildlife needs will also be developed and implemented with involvement of local citizens.

Habitat Monitoring Guidelines

Effective habitat monitoring for grizzly bears, both within and outside the recovery zones, will require a collaborative approach that includes input from all involved federal and state agencies and tribal authorities. Moreover, habitat monitoring protocols inside each recovery zone will be specified in a Conservation Strategy for each area. Acknowledging this, FWP anticipates that the following habitat parameters will be cooperatively monitored, collated with assistance from the Interagency Grizzly Bear Science Team, and reported annually. This will be used to determine changes in habitat quality and guide management decisions.

1. Habitat Effectiveness – FWP, in cooperation with land management agencies (e.g. USFS) will measure habitat effectiveness in each BMU or subunit by application of the best available system, which at this time is the Cumulative Effects Model (CEM)(Note: some Forests are now using the moving windows analysis of open and total motorized route densities and core habitat and this approach will also be utilized where appropriate). Habitat potential is the inherent value of the landscape in the absence of human activities while habitat effectiveness values portrays the value of the landscape in the presence of human activities (e.g. roads, timber harvest, mines and subdivisions). Subtracting habitat effectiveness from habitat potential gives the realized or actual value of the landscape to bears. This can be determined using GIS technology.
2. Road Density – Total road density, open road density and percent secure habitat will be monitored and reported for each BMU.
3. Easements and acquisitions – various agencies and private foundations work to secure conservation easements and acquisitions in western Montana. These serve to improve habitat quality for grizzly bears and an annual report will be submitted detailing these activities.
4. Wildfire activity – wildfires dramatically alter the vegetation and habitat mosaic of grizzly bear habitat. Changes in habitat due to wildfire are generally considered to be long-term improvements in

the overall habitat condition although fire intensity and/or location can have some negative impacts as well. Wildfire activity will however be reported annually.

5. Significant legal or agency activities related to habitat condition – state, federal and corporate land management activities have the potential to affect grizzly bear habitats. Significant habitat management/alteration/improvement activities within the NCDE and CYE will be reported annually. This will include, for example, brief summaries of forest plan revisions, litigations, notices of decisions on logging or oil and gas leases, environmental impact statements and grain spills from trains.
6. Private land development – categories of private land development will be monitored. This information will be used to direct management and outreach efforts aimed at minimizing human-bear conflicts. It will also provide a means of guiding FWP, and other organizations, in efforts aimed at securing conservation easements.

Habitat Management Guidelines

The general approach FWP pursues when dealing with habitat issues is summarized by the following statement: FWP seeks to manage all fish and wildlife habitat on public land, whether roaded or unroaded, as valuable and unique lands that will remain open to hunters, anglers, and other public users. Accessibility to public lands will be balanced with the year-round requirements of fish and wildlife (habitat, clean water, food, shelter, open space, and disturbance management), while maintaining a functioning road system, including keeping inventoried roadless areas roadless (with science-based exceptions made for forest health, restoration, and other national needs).

By implementing such a program we can maintain grizzly bears while still providing for other appropriate uses. Reasons for the decline of brown/grizzly bears in North America are excessive human-caused mortality and habitat loss. Habitat loss results from factors such as conversion of native vegetation to agriculture, depletion of preferred food resources (i.e. whitebark pine and huckleberries), disturbance, displacement from human developments and activities (roads, mines, subdivisions), and fragmentation of habitat into increasingly smaller blocks inadequate to maintain viable populations and connectivity.

The following general management guidelines are applicable coordination measures. While FWP recognizes the need to append habitat standards to USFS Forest plans and to NPS and BLM management plans for the recovery zones (possibly through development and implementation of a conservation strategy), these general guidelines should be considered when evaluating the effects of existing and proposed human activities in identified seasonally important habitats for a variety of wildlife species including grizzlies on federal and state lands.

1. Identify and evaluate, for prioritized projects proposal, the cumulative effects of all activities, including existing uses and other planned projects. Potential site-specific effects of the project being analyzed are a part of the cumulative effects evaluation, which will apply to all lands within a designated "biological unit". A biological unit is an area of land ecologically similar and includes all of the yearlong habitat requirements for a sub-population of one or more selected wildlife species.
2. Avoid human activities, or combinations of activities, on seasonally important wildlife habitats that may result in an adverse impact on the species or reduce the long-term habitat effectiveness. Guidelines for important grizzly bear habitats and seasonal timeframes are as follows: spring

emergence dates (April 1-June 30), alpine feeding sites (July 1-Sept 15), subalpine fir/whitebark pine habitat types (Aug 1-Nov 30), and denning habitat (Oct 15-Apr 15).

3. Base road construction proposals on a completed transportation plan which considers important wildlife habitat components and seasonal-use areas in relation to road location, construction period, road standards, seasons of heavy vehicle use, and road management requirements.
4. Schedule road construction times to avoid seasonal-use periods for wildlife as designated in species-specific guidelines.
5. Locate roads, drill sites, landing zones, etc., to avoid important wildlife habitat components based on a site-specific evaluation.
6. Roads that are not compatible with area management objectives, or are no longer needed for the purpose for which they were built, will be closed and reclaimed. Native plant species will be used whenever possible to provide proper watershed protection on disturbed areas. Wildlife forage and/or cover species will be used in rehabilitation projects where appropriate.
7. Impose seasonal closures and/or vehicle restrictions based on wildlife, or other resource needs, on roads that remain open and enforce and prosecute illegal use by off-road vehicles if given authority. FWP will actively work to secure authority (current authority deals only with hunters and fishermen) through the appropriate process and identify funding to support enforcement efforts.
8. FWP supports the USFS and BLM restrictions banning all motorized off-road/trail use.
9. Efforts will be directed towards improving the quality of habitat in site-specific areas of habitually high human-caused bear mortality. Increased sanitation measures and seasonal road closures could be applied.
10. Continue effective cleaning and removal of corn/grain spills from train derailments and truck wrecks.
11. FWP will work with the Montana Department of Transportation to minimize and reverse grizzly bear habitat fragmentation where possible.

Habitat Guidelines for Grizzly Bears Currently in Place in Western Montana

Management direction, standards, and guidelines for the grizzly bear in western Montana are currently found in numerous documents. Standards, guidelines, and other direction contained therein are currently being applied in various geographic areas and under various land ownership and administration throughout western Montana. These guidelines, incorporating current habitat security attributes, and plans represent the best management practices for planning and implementing multiple use activities within certain portions of western Montana and have led to the expansion of the grizzly bear population. These plans will be used as the basis for coordinating multiple use activities or developing regional grizzly management plans into the future.

Many of the planning documents are subject to amendments and/or undergo periodic formal reviews and revisions. These processes allow the plans to incorporate most recent information and scientific findings. If amendments or revisions of the plans occur, such changes should not compromise the intent of the guidelines as they now exist to conserve grizzly bear habitat security. A summary of these plan guidelines can be found in Appendix G.

Alternatives Considered

1. *Expand the higher level of habitat restrictions and programs currently in place, or which will be agreed to, for the recovery zone to bear-occupied areas outside the recovery zone.*

Ongoing expansion of bears outside the NCDE recovery zone shows that this approach is not necessary. Furthermore, it would not generate social acceptance for the bear and its further recovery.

Incorporating the grizzly as another component of FWP's ongoing programs for all wildlife is a more productive approach. In addition, the approach outlined in this plan does allow FWP to modify the program, if necessary, and adapt the program in the future as more is learned.

2. *Bear specific trail and road restrictions need to be dealt with prior to re-occupation.*

This approach would result in unnecessary impact to user groups without clear evidence of a problem. FWP's efforts on this issue are intended to build higher levels of social acceptance across user groups while still providing the necessary mechanisms to respond should problems occur.

C. POPULATION MONITORING AND MANAGEMENT

Quantitative data on grizzly bear abundance, distribution, survival and mortality are critical to formulating successful management strategies and decisions. Moreover, this information is necessary to evaluate the recovery process. FWP's preferred approach will therefore focus on developing a science-based population monitoring program that provides the information necessary to successfully manage bears in western Montana. Accordingly:

- FWP will conduct monitoring research in cooperation with other entities to obtain more detailed demographic and population trend information where needed.
- Monitoring will be coordinated with other states and provinces and information collected as part of a cooperative effort that will be presented in annual reports.
- Capture and immobilization of grizzly bears for population monitoring will be undertaken with veterinary input and will utilize best available scientific knowledge.
- This effort will be conducted by, and coordinated between FWP staff including the veterinarian, wildlife biologists and bear management specialists, with assistance from the IGBC.
- Population trend, in combination with habitat conditions, demographics, human/bear conflicts, social tolerance, and research findings, will be FWP's guide to decisions regarding population management.
- Results from the 2004 USGS NCDE Grizzly Bear DNA project will assist FWP with bear population size estimation, distribution and population trend from that point.
- FWP will monitor a representative sample of 25 or more adult females in the NCDE to establish population trend and develop monitoring protocols for the CYE and Bitterroot ecosystem as those populations recover.
- FWP will monitor mortality including timing and causes and gather survivorship data in cooperation with other agencies.
- FWP will use verified sightings to document changes in bear distribution and linkage areas used, especially by female bears. They would include DNA samples, photographs, sightings by reliable observers, tracks, and more.

Each recovery zone contains the minimum seasonal habitat components needed to support a recovering grizzly bear population. Recovery zones are further divided into smaller bear management units (BMUs), which afford greater resolution for purposes of habitat and population monitoring.

Analysis units will be established outside the recovery zones. These units will be used to collect and analyze demographic and occupancy data on grizzly bears by geographic area. FWP anticipates these units will be mountain ranges or groups of ranges similar to those currently used for black bear management. However, if information from bears outside the recovery zones indicates a change is

required, the units will be modified as needed. These units will be created solely for the collection of demographic data and will not of themselves generate any new habitat restrictions.

Monitoring Framework

- FWP will conduct population monitoring using the best available scientific methods, while taking costs of monitoring efforts and funding availability into account.

In order to maintain consistency in data collection and compare grizzly bear population parameters inside and outside the recovery zone, monitoring protocols will be similar, although the sampling may vary depending on the survey area. Population trends and estimates developed using the best available scientific data will be used to set mortality thresholds for all human-caused mortalities.

The recovery criteria set forth in the Grizzly Bear Recovery Plan specify that counts of female grizzly bears with attendant cubs should be determined. It is, however, much easier to observe grizzly bears in the GYE than in the NCDE or the CYE because of the presence of drier, open-canopied habitats. As a consequence, this technique is unlikely to provide accurate data with which to assess recovery efforts in western Montana. Thus, while monitoring of female survivorship, unduplicated females with cubs, or unduplicated females with young may be used as an index to assess population trend or abundance over time, other estimates will also be required to accurately gauge recovery.

Population Size and Distribution

Radio-marking techniques used to estimate population size are not broadly applied because of the expense associated with capturing bears within heavily forested habitats where sighting bears from an aircraft can often prove difficult (much of Western Montana). Many researchers in Canada and the U.S. are focusing on "hair-snaring" techniques to estimate number and density of grizzly bears. With this procedure, bears are attracted to sampling stations with a scent lure. At each sampling station, barbed wire is strung between trees and when the bear passes under the wire, a small tuft of hair is snagged. The follicles from these hair samples contain DNA, which can be used to identify individual animals. This technique is conceptually similar to techniques developed to identify bears based on photos taken when bears trip cameras. Advantages of the DNA and camera techniques include reduced need to mark bears or see them from aircraft. However, these techniques are labor-intensive and expensive. In Glacier National Park, USGS researcher Kate Kendall has conducted the most extensive effort to date to estimate grizzly bear abundance using hair-snaring and DNA analysis. This approach has expanded to include the entire NCDE. Although her research is still ongoing, she has identified a minimum number of different individuals (>200) in Glacier National Park and immediate vicinity that is larger than previously suspected.

Density estimates frequently have problems associated with differential inclusion of age or sex groups. Because newborn cubs have high mortality rates, estimates made early in the year will be larger than estimates made later in the year for the same population. Closure problems may result in overestimation of males, the more mobile sex, in a density estimation area. FWP, when attempting to estimate bear density, will be aware of these sources of potential bias and specify which sex and age groups occur in density estimates. With DNA hair-snaring techniques, efforts are made to exclude cubs by setting the barbed wire too high to snag their hair. Regardless, some cubs leave hair samples behind, and some bears greater than 1 year old may be able enter under the barbed wire without leaving hair. The age of a bear is not revealed by DNA analyses. The capture-mark-re-sight technique used in Alaska avoids most

of these problems, but is useful only in areas where bears may be readily seen and may be difficult to apply in habitats with a forest overstory.

Trapping and radio collaring techniques provide necessary data on grizzly distribution, movements, and home ranges. Data collected will include estimation of seasonal, annual, and lifetime home ranges, identification of important seasonal habitats and foods, potential travel or linkage corridors, mortality estimation, extent of occupation, and denning sites. Distribution of bears will be determined by using any or all of the following methods: hair corrals, observation flights, telemetry flights, conflict activities, and verified sightings.

Population Trend Monitoring

Survivorship data will be obtained via aerial, satellite, and ground telemetry of radio-collared bears. These data are used to determine average life expectancy by sex and age class, causes of mortality, etc., for bears that inhabit different portions of the ecosystem. All suspected human-caused mortality will be investigated by FWP personnel to determine cause of death. These mortalities will be recorded and the information used, along with other mortality data, in the management of the population. This survivorship information will be fundamental to addressing the issue of the potential differences in survivorship of grizzly bears in the recovery zones, where there are extensive habitat protections, versus bears that live on multiple use areas outside the recovery zones.

Population Monitoring Guidelines

FWP recognizes that any one factor cannot provide the needed information to assess population status and trend. Ultimately, assessments will require multiple sources of information. In order to affectively assess the status of the grizzly bear population in western Montana, the following will therefore be monitored and reported annually. These data will provide a means of assessing population health, determining population changes and will guide management decisions.

1. Population size monitoring – assessing the status of the grizzly bear population will be critical to gauging recovery efforts. Although direct monitoring of the total number of bears is not feasible, results from the NCDE DNA study will provide an accurate assessment and estimate of the grizzly bear population for 2004. After such time, if adequate funding is not available, density estimates may be used as indices to gauge population change relative to the 2004 estimate.
2. Trend monitoring - the benchmark estimate of population size through DNA techniques will not be the only population index required to judge recovery under the ESA. Estimates of population trend using critical population parameters can yield the rate of change in a population and proximate causes for the change. FWP has already initiated a population trend program that focuses on determining the fate and reproductive status of female grizzly bears in the NCDE. The goal of the program is to maintain a representative sample of 25 or more female grizzly bears fitted with radio telemetry collars that are well distributed throughout the ecosystem. Objectives include (i) monitoring survival and reproductive rates of females to determine population trend (ii) monitoring distribution of bears inside and outside recovery zones (iii) collecting and providing information on management-orientated aspects of grizzly bear ecology (iv) summarizing conflict management activities to help managers interpret population size and trend indicators.

In addition to data from the 25 or more collared females, the following will also be gathered as part of the trend monitoring program:

- i. Female-young monitoring – while difficult to observe in western Montana, sighting records of unduplicated females with cubs will be collected and organized annually.
 - ii. Grizzly bear mortality - mortalities will be investigated and cause of death determined from field investigations and through forensic work. DNA samples will be collected from all dead bears. Both known and probable mortalities will be used to set mortality thresholds. Mortality reports will be made available to agencies and the public annually.
 - iii. Conflict management – conflict management will be summarized annually and made available to agencies and the public, and used by managers to help interpret population indicators and determine where conflict prevention actions should be focused.
3. Health assessment – disease surveillance will be conducted as part of an ongoing effort to determine the health status of the grizzly bear population. This will include analysis of blood and fecal samples as well as parasite prevalence.

Population Management Guidelines

As stated previously, we recognize that no one factor can provide all information necessary to assess population size and trend. Ultimately any assessments will result in some level of estimation and extrapolation for management purposes. This is the same approach FWP has used successfully for many other species of wildlife. To assure that our assessments of population size and trend are adequate, we will review the following in making our judgments.

1. Laws and regulations may have major influences on the bear population and FWP will evaluate both state and federal changes. For example, revised or updated travel and forest plans have the potential to affect bear conservation, as road closure policies will influence the number of grizzly bears susceptible to mortality.
2. A systematic method to survey public and professional sectors and their perceptions of population trends may be developed.
3. Public opinions and perceptions from annual tentative hunting season regulation meetings will be solicited and evaluated.
4. Results from population and habitat research will be consulted. Specific changes in age structure, unreported mortality from marked bears, population densities, habitat use, and habitat quality will be considered.
5. Northwest Montana's grizzly bears are linked to those in Canada and Idaho and as a consequence, land use changes in those states will be monitored. Management policies will also be evaluated in relation to FWP policies. If excessive mortality is occurring in a neighboring state or province, the FWP program will be adjusted to ensure survival of the population, and FWP will work with that state or province to reduce mortality.
6. Changes in the population status in Glacier National Park and on tribal lands will be gathered through discussions with the appropriate management agency.
7. Realized or perceived changes in the price of grizzly bear parts will be evaluated. Such changes may affect the level of profiteering.

8. An attempt will be made to document grizzly bear range expansions or contractions through data gathering. This data will help evaluate changes in the population status.
9. Based on all available evidence, changes in management areas or management unit boundaries will be evaluated.
10. The number of control actions will be determined annually. If a trend becomes apparent, then the program will be re-evaluated and adjustments made to ensure the population is not being excessively impacted. The number of transplants from, or into, the ecosystems will be documented.
11. Evaluation of mortality statistics will be conducted. It is recognized that not all bear deaths are detected and recorded. FWP will, however, try to be as complete as possible. The following mortality statistics are of particular importance:
 - a. Male/female sex ratio.
 - b. Evaluate age structure of the harvest: ages should be calculated separately for males and females.
 - c. Determine total mortality: trends in total number of bears should be evaluated in conjunction with other population estimates and/or statistics to determine if changes in mortality quotas are needed. It is anticipated that human caused mortality quotas will be conservative at 4% or less of the total population on a 6 year running average with no more than 30% females to allow for continued increased populations. This recommendation is based on the existing Grizzly Bear Recovery Plan, on past experience with grizzly bear management in northwestern Montana as reported in the Programmatic EIS for that area and subsequent updates. However, based on ongoing improvements in our knowledge of grizzly bear management this approach may be modified to continue to use the best available science.
12. Annually monitor, record, and evaluate litter sizes throughout the ecosystems by cooperative ground surveys, aerial surveys, and from the trend monitoring sample of 25 or more adult females marked with radios.
13. FWP will evaluate hunter effort if a hunt occurs. Changes in hunter effort, location of hunt, etc., will substantially aid interpretation of population statistics.
14. FWP will evaluate and implement ways of reducing mistaken I.D. and accidental killing of grizzly bears by black bear hunters through education and public outreach programs.

Future Distribution

FWP expects grizzly bear distribution to continue to increase. Preferred approaches to managing movement of grizzly bears into new areas include:

- FWP views habitat linkage as providing opportunities for bears to naturally reoccupy suitable, but unoccupied habitat, and will continue to work with Idaho, Canada, and the IGBC to address this issue.
- Areas of potential focus to address linkage problems with movement of bears are the Bitterroot and other intermountain valleys in western Montana, and the Continental Divide and Upper Blackfoot from north of Lincoln south through the upper Clarkfork drainage into the Pipestone Pass and Anaconda-Pintler areas as well as the Evaro area, Highways 2, 93, and 200 and Interstate 90.

Current data indicate that the distribution of bears in western Montana is increasing. The most recent review of the distribution of grizzly bears in western Montana, conducted by the IGBC, demonstrated occupancy well beyond the recovery zones (see Figure 2). These boundaries should, however, be

interpreted as an approximation, and additional supportive evidence should be considered when making judgments about occupied habitat near the edge.

Based on current programs, both within and outside the recovery zones, it is expected that range expansion will continue during the period covered by this plan. FWP recognizes that distribution changes beyond the recovery zones as well as adjacent habitats may occur at a somewhat slower pace. It is FWP's intent, however, to implement this management plan so that expansion in distribution will continue. If the expected increase in distribution does not occur, FWP will consider translocation of non-conflict animals into suitable habitats to support distribution increases. In accordance with Montana statute (MCA 87-5-711), prior to any such decision the Commission would determine if such management action was warranted, based upon scientific investigation and after a public hearing. This approach is consistent with that used for all of the species FWP manages.

There is currently a great deal of discussion and work aimed at addressing and defining "population linkage." The potential for this to occur is demonstrated by various assessments of habitat, which are ongoing and, evidenced by the information our agency provides the public on areas, where even today there is the possibility of encountering a grizzly bear (Figure 10).

The IGBC has created three linkage-zone task forces to further address this issue. Generally, a linkage zone is an area between two areas of habitat where animals can live at certain seasons and where they can find the security they need to move between these areas. Linkage zones are broad areas of seasonal habitat where animals can find food, shelter, and security. The long-term health of populations of carnivores will benefit from linkage and population interaction at broader levels. These linkage areas can likely serve multiple carnivore species as well as other wildlife species such as ungulates. Dramatic changes are currently occurring in the remaining possible linkage areas due to ongoing human development and the time to maintain connection opportunities in some areas is growing short. A linkage zone, however, is not a "corridor".

A corridor implies an area just used for travel however movement between ecosystems by carnivores rarely if ever occurs this way. For carnivores to move between ecosystems, they require habitats that can support their feeding and behavioral needs in these adjacent areas. As such, linkage zones are areas that will support low-density carnivore populations often as seasonal residents. Several models attempt to address this issue. These include, for example, those developed by the American Wildlands "Corridors of Life" and Craighead Environmental Research Institute as well as by the USFWS. These models use Geographic Information Systems (GIS) to predict the broad areas of highest potential for linkage between habitat units for various carnivores. Each model has different assumptions. The main assumption of the USFWS Linkage Zone Model is that human activities determine wildlife distribution in disturbed areas. This model uses road density, human developed sites (i.e. houses, campgrounds) and the influence zone around them, presence or lack of vegetative hiding cover, and presence of riparian zones.

Linkage zone models are used to predict where grizzly bears and other wildlife species, particularly large carnivores, are most likely to successfully cross between large blocks of public land in the northern Rocky Mountains. These predictions are based on the assumption that movement is most likely to be successful where human activity is least. This does not mean that grizzly bears and other species will not try and cross other areas. The linkage zone concept is based on maintaining and enhancing movement possibilities in areas where such movement is most likely to be successful. A critical element of linkage zones is the pivotal role that private landowners will play in maintaining these areas. Clearly, all agencies, including FWP, must work together to meet landowner needs and engage them in these

programs. Linkage programs already in place include FWP's Habitat Montana and Wildlife Mitigation programs which focus on easements and acquisitions. Other vitally important programs focus on work with local land trusts on smaller easements.



Figure 10. Current and potential grizzly bear distribution in Montana. Light gray = areas occupied by black bears. Dark gray = areas with the potential to encounter grizzly or black bears in Montana.

It is FWP's long-term goal to allow the populations in western Montana to reconnect by occupying currently unoccupied habitats. FWP anticipates that successful implementation of this plan, along with adequate local involvement, can allow this to occur. In the near term, FWP intends to address those land-use patterns that promote or hinder bear movement. Focus areas currently are the Evaro Hill area, the St. Regis area, and intermountain valleys. FWP currently uses habitat programs in these areas to provide for wildlife needs and anticipates additional efforts with the Montana Department of Transportation to address issues of wildlife movement across roads (especially Interstates 90; and Highways 2, 200, and 93). FWP will also assess proposed Forest Highway Projects in that they have the potential to negatively impact future linkage of many wildlife populations. FWP will also work with landowners, local land trusts (e.g. Five Valleys, Montana Land Reliance, The Nature Conservancy) and private interests to promote programs that provide for wildlife access to private lands. In summary, FWP's goal is to expand recovery in western Montana.

Alternatives Considered

1. *Only collect and utilize population data in a manner that provides precise population estimates.*

While the current DNA study will achieve this, we don't believe such an effort will occur on a regular basis. For a slowly reproducing species like grizzly bears in which even a maximum lambda (a measure of population trend) will always be close to 1.0 (meaning the populations don't fluctuate greatly on an annual basis), it will seldom be possible to have a 95% confidence interval that does not overlap 1.0. However, in FWP's judgment, using the weight of multiple indices collected in different

ways and multiple sources is a more practical and meaningful approach for assessing population response to management. Population trend data will be FWP's primary guide to management decisions.

2. *Limit grizzly bear distribution to the recovery zones.*

This approach is logistically impossible and biologically undesirable. In order to maintain resiliency in the population to changes in habitat, tolerance levels and other factors, bears should occupy a broader landscape. Also, bears cannot be confined to the recovery zones because there are no barriers to contain them and it is impossible to know the location of every animal all the time.

D. HARVEST MANAGEMENT

Regulated hunting continues to play a significant role in shaping successful wildlife conservation strategies for many species throughout Montana. As part of a comprehensive grizzly bear management program, our goal is to allow for limited regulated harvest upon delisting of bears implemented within a scientifically sound framework that maintains a viable and self-sustaining population. Accordingly, preferred approaches will include:

- Limited and regulated harvest of grizzly bears will be a part of Montana's long-term conservation program.
- Any hunting program will be designed and implemented using the best available scientific knowledge.
- It will be coordinated with surrounding states and provinces to avoid excessive mortalities.
- It will be open to public review, similar to the processes used for managing other species in Montana.
- The female segment of the population will be given additional protections in any proposed hunting program. For example, the killing of females accompanied by young will be prohibited. Timing of seasons will also be used to reduce female mortality.
- Regulated hunting will be used as one tool employed to garner additional public support and ownership thereby aiding in long-term survival and reoccupancy of habitats.
- If opportunities should arise to expand recovery, FWP is committed to utilize all or a portion of any harvestable surplus through live removal and relocation of bears to other areas within or outside Montana.

The State of Montana's grizzly bear management program uses hunting as one tool among many in promoting the long-term conservation of the grizzly bear. Any regulated public hunt must therefore be evaluated in the context of the entire bear management program and its efforts to promote management and ongoing recovery of this species. Harvest recommendations and/or programs will be conservatively applied, and only after the best available scientific data indicate that the population can sustain a predetermined level of take. Moreover, all mortalities from hunting will be counted against mortality limits and hunting of females with young will not be allowed.

It is important to make the distinction between regulated removal and the unregulated mortalities that occurred in the past. Unregulated hunting can, and often does, lead to dramatic population declines. Such was the case at the turn of the 20th century when bears were persecuted and killed without provocation, license, limit, or season, and in excessive numbers. Current managed and regulated hunting programs can, however, promote population increases and recovery for all species. Hunting mortalities can be directed at areas with high human-bear conflicts and thereby reduce bear numbers and conflicts in

such peripheral areas. Furthermore, wildlife populations typically produce surplus individuals and off-take quotas are frequently developed in such a way that the population still increases. In designing a regulated harvest program, Montana also recognizes that managing wildlife populations that range across jurisdictional boundaries is challenging, but especially so when different management goals are identified on either side of a boundary. In order to avoid excessive mortalities, FWP will work closely with surrounding states and provinces and incorporate data from these regions when determining harvest quotas.

FWP recognizes that hunting impacts population composition in different ways and will institute regulations to afford greater protection to the female segment of the population. In central Alaska, for example, females constituted 18% of the spring season hunter kill prior to May 1, but more than 40% of the harvest after the third week in May. In the fall, females represented 53% of the kill during the first week of September, but less than 43% of the kill during October. Thus, in early spring, hunters primarily kill males because they are the first to emerge from dens, while females accompanied by newborn cubs are the last to emerge from dens. Similarly, males are the last to enter dens in the fall, and late fall season hunts typically harvest a higher proportion of males. By instituting strict timing and season regulations, male bears would be more vulnerable to hunters than female bears. Furthermore, males tend to range more widely and as a consequence are more likely to encounter areas frequented by hunters.

Additional safeguards could also be implemented. In Alaska and Canada, regulations prohibit shooting females accompanied by young-of-year or yearling offspring, which also contributes to a male bias in hunter harvests. In the Yukon, a point system is used that provides incentives for outfitters to avoid harvesting females. Distinguishing between males and females is aided by the likelihood that females will usually be accompanied by offspring and males may be exceptionally large. In addition, there are training videos available to assist in educating hunters on the differences between male and female grizzly bears. In Montana, by using season timing and protective regulations for females with young, FWP was similarly able to focus harvests on males during its legal hunt.

Finally, regulated wildlife harvest is one factor that has allowed the recovery and maintenance of predator and prey populations in Montana and elsewhere. While funding will be generated through license fees, FWP strongly believes that regulated harvest of predators builds tolerance by those most negatively impacted by their presence. In addition, persons who participate in regulated hunting often play a pivotal role in maintaining the prey populations that predators are dependent upon. It is therefore intended that regulated harvest of grizzly bears be a part of Montana's program and commitment to grizzlies, when and where appropriate. By managing grizzly bears as a game species they are provided recognition as a valuable wildlife species, protected from illegal harvest, afforded population monitoring and research, and all of the other benefits managed species receive.

In summary, FWP recommends that at some point after delisting, a regulated hunting season be a part of the overall program for the following reasons:

1. Legal harvest can be managed so as to have minimal impact on the population as a whole.
2. Human-bear conflicts could be reduced through harvest by lowering bear densities in localized areas if appropriate.
3. Hunting promotes better acceptance of this large and potentially life threatening animal by the local public who are asked to live with grizzlies, and this acceptance is a key to long-term survival of the bear. If the local publics feel threatened by grizzlies, or the management program, they will defend

themselves as necessary. This in turn can have detrimental effects on existing grizzly populations and clearly limits opportunities for expanded recovery efforts due to local resistance.

4. Hunting grizzlies may alter cub survival and recruitment providing for population increase. While there is currently some scientific disagreement on this possibility, there is no question that initial harvest levels in western Montana will be so low that any effect of regulated take on increasing cub survival and recruitment would be impossible to measure.
5. Hunters have been, and continue to be, one of the strongest supporters of long-term conservation efforts. Hunters have purchased significant habitat in western Montana and returned it to wildlife use including grizzly bears. This strong connection between hunters and habitat is critical to continued successes at restoring wildlife including grizzly bears. Hunting gives direct ownership for the welfare of this species by some of the most ardent supporters of wildlife in Montana.
6. Hunting allows the grizzly to be a social asset instead of being considered by some groups as a liability. Hunting provides revenues from license fees on hunted species and excise taxes on equipment to governmental entities for enforcement of wildlife management regulations. In addition, there is an economic value to local, rural communities from regulated hunting programs. Without a regulated hunt, costs are borne by hunters who can't pursue grizzlies (because our programs still use license dollars) and the public at large.
7. The presence of licensed hunters can reduce illegal activities. Every year ethical hunters in Montana report people who have violated laws protecting wildlife. More "eyes and ears" in the field can deter illegal activities.

Harvest Management Guidelines

There are many statutes and regulations in Montana that would affect any proposed hunt. In addition, the State of Montana can anticipate specific management constraints on any hunt as summarized below:

1. Hunting will not be proposed immediately if, and when, delisting occurs. It is clear that the public will want some assurance that the other components of the grizzly bear management program are being adequately implemented prior to a regulated hunt.
2. There are areas that won't be hunted. There are currently areas outside the PCA and within that are closed to hunting and will continue to be.
3. The justification for any proposed hunt will be available to public scrutiny and comment prior to any decision or possible implementation.
4. Regulations have been and will be established to protect the female segment of the population as much as possible. For example, if a hunt were to occur, FWP Commission regulations make it illegal to kill females accompanied by cubs or young and seasons can be timed to reduce female mortality.
5. After March 27, 1987, a state statute was implemented which only allows someone to kill one grizzly bear in that person's lifetime (87-2-702).
6. The FWP Commission has the authority to close seasons at any time if mortality was excessive, i.e. occurring at levels which would have long-term negative impacts on the population due to unforeseen circumstances.
7. FWP management experience has shown that while a general managed hunt can reduce some conflict situations; a "damage hunt" targeting individual problem bears has demonstrated this approach is of limited value in the management program. Therefore, we do not intend to use this approach for the following reasons:
 - a. Damage hunts characterize the species as a "problem" instead of the valuable wildlife resource they represent.

- b. Response time is critical in damage situations and locating a hunter can delay response time.
 - c. There are ethical problems with using technology, for example radio collars, to locate and kill problem animals.
 - d. Many conflict animals are inaccessible to hunting during daylight hours.
 - e. There are ethical problems associated with FWP "guiding" a hunter toward an individual bear.
8. No baiting or use of dogs to hunt grizzlies is permitted.
 9. Any bear taken must be used for food. It is illegal to waste bear meat or leave it in the field. Also, bears will be hunted when their fur is in good condition to allow complete use of animals harvested.
 10. Under MCA 87-3-110, it is illegal to buy or sell grizzly bear parts unless they have been registered with FWP.

Montana's hunting season setting process is an open and dynamic process, although it may be unfamiliar to non-hunters. The following is a synopsis of the process: a staff biologist or a group of biologists generates a proposal. The proposal is accompanied by a justification that relies heavily on biological data and includes population objectives, trends, habitat types, weather trends, and social constraints. The proposal is next reviewed internally and if found adequate is sent to the FWP Commission. After reviewing the proposal and justification, the Commission at its December meeting adopts, modifies, or rejects it as a tentative. If adopted as a tentative, it is then released for public review and comment. The public review process occurs annually in January and February. During this period, biologists around the state conduct public meetings and formal hearings in nearly all of the major cities and towns across the state as well as with any groups or organizations that request them.

Additionally, the tentatives are published and otherwise made available to any who wishes to review and comment on them. At the end of the comment period, all of the comments received during the meetings and any written or other verbal comments received during the comment period are summarized and sent on to the Commission for its review. In early February, the Commission then formally accepts, modifies, or rejects the proposals based on the biological justification and the social concerns expressed during the review period. Additionally, the public can also make proposals to the Commission in the form of a tentative at the December meeting. This process is repeated on a biennial basis.

Alternatives Considered

1. *Eliminate hunting as a part of the grizzly bear management program.*

This approach would eliminate a key local and national constituent group with demonstrated commitment to the species and its habitat. Additionally, this would greatly hinder FWP's ability to develop increased tolerance for the species. This management tool has been used successfully for other wildlife, including bears, in Montana and elsewhere and confirms its usefulness.

2. *FWP should make bear spray mandatory for hunters.*

While FWP is currently prepared to assist in notifying people of the benefits of bear spray and encouraging recreationists to carry it, it appears premature to make it mandatory at this time. Mandatory carrying of bear spray may be appropriate at certain times or places, and FWP will evaluate this option as appropriate. However, there are currently significant liability and enforcement issues surrounding a "mandatory" approach. Furthermore, carrying spray may lead to a

false sense of security that replaces common sense and careful backcountry practices. Bear spray can be ineffective in windy areas, and individual bears can have very different responses to the spray. Also, in some situations people would be better to assume a defensive posture (on the ground with no movement) than to be actively fumbling for a spray can. Also, the spray comes in many brands, with many capsicum concoctions, with many shelf-life constraints and propellant systems. It is no doubt a valuable tool, but it is only one of many and cannot replace common sense or other recommendations of appropriate behavior. However, to provide an example for the public, FWP will make bear spray available to all field personnel operating in bear country and encourage employees to carry it during the non-denning season when bears are active.

E. ENFORCEMENT

FWP's goal is to develop a program that includes the level of state and federal law enforcement deemed essential to achieve compliance with laws and regulations governing grizzly bear conservation.

- FWP will actively work to educate judges and county prosecutors, federal attorneys, and others on the importance of strict fines to deter illegal killing.
- FWP enforcement personnel will continue to coordinate with federal, tribal and local authorities as necessary to investigate and prosecute those people who illegally kill grizzly bears.
- FWP will enforce the statutes relating to intentional feeding of both black and grizzly bears to eliminate the problem.
- FWP will seek the appropriate authority to enforce attractant storage regulations on federal lands.
- FWP will seek additional funding and authority to enforce travel management plans, including off-road vehicle use.
- FWP will evaluate the further need for higher fines and/or penalties (such as loss of hunting, fishing, and trapping privileges) for illegal mortalities.

Statutes have been passed to make it illegal to intentionally feed or attract bears (Appendix H). People who intentionally feed or attract bears to their residence create problems that impact their neighbors, jeopardize human safety, and result in problem situations. These actions are now illegal.

In addition, because of concern that fines for illegal killing of a grizzly bear were too low, the state legislature increased them in 2005 (House Bill 514). Current state fines for illegally killing a grizzly bear are \$8,000 restitution plus \$500 to \$2,000 more, and imprisonment in the county detention center for not more than 6 months or both. In addition, that person, upon conviction or forfeiture of bond or bail, shall forfeit any current hunting, fishing, recreation use, or trapping license issued by this state and the privilege to hunt, fish, or trap in this state for 30 months from the date of conviction or forfeiture, unless the court imposes a longer forfeiture period. Fines for the interstate movement of illegally killed or possessed animals can be much higher. FWP will investigate ways of informing and educating judges and local prosecutors as to the importance of grizzly bear recovery to the state to ensure that they take prosecution and sentencing of offenders seriously.

The FWP Law Enforcement Division enforces rules established by the FWP Commission along with other Montana statutes related to wildlife and human safety. FWP enforcement efforts concerning grizzly bears are focused in three areas: patrols of both wilderness and non-wilderness areas, damage control, and poaching investigations. Wilderness and non-wilderness areas are patrolled during the general hunting season and at other times. In addition, hunter camps are checked for harvested game and compliance with outfitter regulations. Federal travel restrictions are not currently enforced by FWP

wardens except for hunters and anglers conducting activities under FWP Commission Rules and Regulations. Initial conflict bear complaint responses may involve various FWP personnel; however enforcement division personnel are frequently the first on the scene. Generally, FWP wardens will assist landowners in contacting WS in cases of suspected depredation but will not investigate bear-livestock conflicts further, unless WS agents request field assistance.

There are currently MOUs between USFWS, USDA and FWP (Appendices D and I). These MOUs outline joint responsibilities for violations of federal and state laws. They also address responsibilities and guidelines for joint investigations by Montana game wardens and USFWS special agents, as well as between WS and FWP outlining joint investigations of grizzly bear depredations.

FWP and USFWS enforcement personnel investigate and prosecute all violations involving illegal mortality. Cases are processed through the county attorney's office or turned over to the USFWS when they appear to involve interstate movement of grizzly bear parts. FWP also coordinates with federal officials in undercover operations. The USFS manages attractant storage restrictions on Forest Service lands and some counties have county ordinances on food storage, which are enforced by the county sheriffs.

FWP wardens have no clear enforcement authority to enforce attractant storage regulations on Forest Service lands. Measures should be taken to establish this authority and FWP will investigate options. This will be increasingly important as the bear population expands and, hopefully, attractant storage regulations are required on additional national forest lands. FWP wardens spend a great deal of time in backcountry areas checking people on national forest and other lands, and their ability to enforce these rules would ultimately result in greater compliance and fewer bear/human conflicts.

Finally, the enforcement aspects are critical enough to program success that additional resources should be made available to implement new responsibilities. These would include sufficient funds for equipment and necessary overtime required to operate in remote areas and, ultimately, additional staffing. The USFS and BLM will be approached to try and identify additional funding to support FWP in these efforts due to increased responsibilities enforcing attractant storage and travel plan regulations if that authority is developed.

Alternatives Considered

1. *No additional authority should be sought, either through MOUs and statutes, to expand state enforcement authority in dealing with preventive measures relating to human-bear conflicts.*

While this was considered, FWP enforcement personnel are in the most effective position to address these problems due to ongoing efforts to enforce all laws and regulations protecting wildlife. These personnel are stationed in communities across Montana.

F. EDUCATION AND PUBLIC OUTREACH

As grizzly bears expand their distribution, a key determinant of their long-term status will be human attitudes towards them. FWP's goal is to minimize human-grizzly bear conflicts while building support for bears and bear management. Preferred approaches to meeting this goal include:

- FWP will continue to provide outreach programs to local schools, colleges and community organizations.

- FWP will develop ways to target education efforts towards both new and long-term Montana residents regarding human-bear issues.
- As time permits, FWP will work with local planning entities to address the needs of grizzly bears in select new developments and new residential areas.
- FWP will continue to work with private organizations and interest groups, as well as the media, to include safety tips on living and recreating in bear country.
- FWP will include lessons on human safety and conflict prevention while hunting in bear habitat in each hunter education class.
- FWP will continue to expand its efforts to assist hunters with identification of black versus grizzly bears. In 2002, FWP began mandatory training for people interested in hunting black bears. Organized training opportunities may be developed.
- FWP will evaluate if the current one time mandatory bear identification test should be taken annually.
- FWP will recommend that the Board of Outfitters require all outfitters and guides operating in bear habitat to be certified in human-bear safety and conflict prevention.
- Education and public outreach will be integrated with enforcement on issues such as sanitation to effectively minimize human activities that may lead to human-bear safety issues.

Underlying attitudes toward grizzly bears are highly variable and relate to issues as diverse as human safety concerns, perceptions of risk, economic impacts on livestock producers, and existence values. Given the varied array of attitudes, management strategies are unlikely to succeed without practical public information and education programs that are designed with specific stakeholders in mind. Therefore, a partnership information and education approach involving FWP, as well as other agencies, tribal authorities, local communities and private interests will likely be more successful at minimizing human-bear conflicts as well as developing a stronger sense of agreement among Montana residents about the state's goals and management programs related to bears.

FWP recognizes that the key to any educational program is cooperation and commitment by all involved to provide appropriate information. The development, implementation and widespread dissemination of accurate, fact-based information and educational materials concerning grizzly bears are essential for managing bears within the region. Moreover, those who live, work and recreate in western Montana need clear and useful information about bears in order to foster understanding of bear behaviors and to minimize negative human-bear interactions. In essence, a coordinated information and education campaign will be most effective if it facilitates changing inappropriate human behaviors and helps people learn to coexist with bears. In fact, significant progress has already been made in this arena by utilizing the skills of FWP's bear management specialists and FWP intends to continue along these lines.

FWP's Communication and Education Division is responsible for developing outreach and education plans. The division provides timely information on FWP activities to the media and conducts a variety of educational and recreation-safety programs. Through this program, FWP will continue to promote the grizzly bear as a valuable state resource via public school and community presentations, community-based workshops, news releases, magazine articles, and radio and television spots. Informally, FWP personnel from all divisions routinely disseminate information to the public on a routine basis and will continue to do so. FWP will encourage federal land management and wildlife agencies to continue their vital role in grizzly bear education. FWP will coordinate with these agencies to provide bear safety literature at their respective trailheads and offices in occupied bear areas. In many instances this is already underway.

Examples of current FWP educational and public outreach programs, implemented in many instances in collaboration with FWP's bear management specialists include the following:

- Presentations to schools, colleges, civic and sportsmen's groups.
- Interviews with newspaper, radio, and TV reporters.
- Statewide newspaper features.
- News releases, some with other interested cooperators.
- Radio reports.
- FWP website devoted to bear identification.
- Public Information Plan designed by Conservation/Education Division in reaching public.
- Video entitled "Bears and Bees," advising beekeepers about avoiding conflicts with bears.
- Information on electric fencing to keep bears out of orchards, garbage, grain storage and bee yards.
- Meetings with homeowner groups on sanitation, bear-proof containers at Whitefish, bear-proof enclosure fence for garbage containment.
- Day-to-day public contacts by FWP personnel during conflict situations with bears.
- Living with Grizzlies brochure (see Appendix B).
- Who's Who? - Know Your Bear brochure.
- Bears brochure.
- Be Bear Aware children's handout.
- Bear Hunters - Know Your Target! wallet card
- Internal education and training
- Bumper stickers "A Fed Bear is a Dead Bear"

Human safety is also of utmost concern when hunting in grizzly bear country. To instruct young, old and first-time hunters in appropriate techniques when hunting in grizzly country, FWP will incorporate a lesson on human safety while hunting in bear habitat in each hunter education class. In Montana, no person between the ages of 12-17 may apply for and receive any hunting license unless the person possesses a hunter safety certificate. Current records confirm that approximately 7,000 students are certified each year through FWP's hunter education program.

In 2001 (implemented in 2002), the FWP Commission adopted a program requiring mandatory bear identification testing to be completed by black bear hunters in Montana prior to the purchase of a black bear license. The program is offered because Montana's grizzly bear population is increasing in both number and in range. Today, grizzly bear encounters are on the rise, and black bear hunters must be aware that they are likely to encounter grizzly bears in areas they may not have inhabited just a few years ago. Black bear hunters must sharpen their ability to quickly distinguish between black bears and grizzly bears to prevent and avoid mistaken identity killings of grizzly bears.

The FWP Commission is also concerned about the impact that mistaken identity killings (e.g. grizzly versus black bear) could have on maintaining a recovered grizzly bear population or on recovery in areas that remain below stated objectives. The commission believes this issue can be addressed by directly informing and educating all black bear hunters. Some consider the elimination of the black bear hunting season in Montana a better solution. Such an action would, however, minimize FWP's ability to manage bears and create a myriad of other problems that essentially lessen support for management and expanded distribution of grizzlies.

The following summarizes the current bear identification requirements the FWP Commission approved:

- The requirement applies to everyone purchasing a bear license.
- Testing is required before purchase of a license.
- A minimum score of 80% is needed to pass the test. The test can be repeated until a passing grade is obtained.
- Recertification is not required.
- The test is available online through FWP's website (<http://fwp.mt.gov/default.html>), by mail, or at regional headquarters.

In order to reduce mistaken identity killing further, FWP is currently evaluating its bear identification requirements. Possible options include strengthening the test through the addition of more pictures and inclusion of questions about laws and situational ethics. In addition, implementing mandatory annual training courses for black bear hunters statewide, or for specific hunting districts in or adjacent to the CYE, are being considered.

Limited quota big game hunting seasons exist in many areas occupied by grizzly bears. Limited quota licenses require a special application and license issuance process. A brochure on bear country safety will be mailed to each successful applicant when their license is issued; this includes both resident and non-resident hunters.

The Board of Outfitters will also be encouraged to require that all outfitters and guides that provide services within areas occupied by bears be certified in human safety and conflict prevention in bear country. The outfitting industry has voluntarily developed a bear education course in partnership with the USFWS, USFS, National Park Service, the Wyoming Game and Fish, and the Professional Guides Institution. This course would serve as the model for training in Montana. In addition, a bear safety video has been purchased and made available by FWP.

Alternatives Considered

1. *No expansion of education and public outreach efforts.*

Expanded efforts are essential to the objective to allow for expanded bear distribution and long-term survival of the species.

2. *Modify the mandatory bear ID test for black bear hunters to require "in person" testing and recertification.*

Because this is a new program, it will be monitored to determine its success at reducing mistaken identity mortalities. If adjustments such as those suggested or others become necessary, they may be implemented in the future. Such changes are currently being evaluated in the Cabinet-Yaak area.

G. FUTURE RESEARCH

While ongoing monitoring and research has provided a wealth of information on grizzly bears in the region, much still remains unanswered. FWP's goal is to promote a scientifically sound research program that increases our knowledge of grizzly bears in western Montana in order to guide recovery efforts and increase public support and confidence in the program.

Preferred approaches include:

- Continuing research will be an important component of the grizzly bear program.
- Research proposals will be evaluated by the appropriate Interagency Grizzly Bear Subcommittee to ensure that they are justified and address questions specific to the grizzly bear recovery program. FWP will also examine the possibility of incorporating additional outside review.
- Collaborative research will be undertaken with partners such as universities, NGOs, tribal authorities, federal agencies and adjoining provinces.
- Research projects will focus on gaining a greater understanding of region specific factors affecting grizzly bear numbers and distribution. Continued baseline research on habitat use, movement patterns, population trends, survivorship and mortality will be conducted.
- Population health assessments and investigation of potential impacts of disease will be initiated.
- Research that is applied in nature and integrates the biological, economic and social factors affecting grizzly bear management will be actively pursued.
- Bear use, human use and human-bear interactions in areas of high human occupancy are a priority.
- Impact of recreational activities on grizzly bear seasonal habitat use are a priority i.e. snowmobiles and backcountry use.
- Efforts to assess impacts on habitat security as a result of commercial activities such as mining and timber harvest are a priority.
- FWP's Communication and Education Division will evaluate effectiveness of bear-safety public education efforts.
- Research findings will be published and/or disseminated at regional meetings and to interested/affected parties.

Research is an iterative and ongoing process, and FWP's adaptive management program is formatted to include updated information and understanding of the species and its requirements. Considerable work has been conducted on grizzly bears in other areas; namely the GYE. While many of these research findings are applicable to northwestern and western Montana, incorporating an active research component into this plan will provide FWP with region specific data. Such data will ultimately refine our knowledge of bears in the region.

Population and habitat research is already being conducted as part of an on-going monitoring program. In addition to these projects, Montana requires improved means of assessing the biological carrying capacity of actual or potential grizzly bear habitats. Understanding habitat capability through intensive research utilizing GIS technology may assist with this and USFS is already engaged in such research. Such assessments are important to ensure that restoration efforts for grizzly bears are successful in areas where expansion is occurring. It also allows management policy to adapt to environmental change thereby ensuring long-term persistence. As such, adaptive management is an active flexible management strategy in which managers monitor the results of management practices using habitat and population data and respond as necessary with management changes. An Adaptive Management plan includes three critical elements:

1. Conceptual and quantitative models that make explicit the current understanding of the system, the underlying hypotheses driving management, and key uncertainties;
2. Rigorous monitoring plans focused on reducing the most critical uncertainties and clearly evaluating progress towards management goals; and
3. A scientifically defensible plan for monitoring and research including rapid feedback from management outcomes to revised management decisions.

FWP is also interested in evaluating the efficacy and projected outcomes of specific management actions. This will be accomplished through a combination of the monitoring effort and research efforts to evaluate management strategies in various settings. For example, by investigating bear use, human use and human-bear conflicts in areas with high human occupancy such as portions of the NCDE, managers and local communities will in a position to adopt changes and reduce the likelihood of human-bear conflicts.

Continued improvements based on assessing potential impacts of hunting will provide useful data because grizzly bears have one of the lowest reproductive rates among North American mammals. Without such techniques, appropriate hunting opportunities may be needlessly curtailed, or populations over-harvested. Ongoing assessments such as this are part of other wildlife management programs and will be for grizzly bears.

Further research aimed at investigating the importance of anthropogenic impacts on bear habitats is required. As documented elsewhere, roads, commercial activities (mining, logging), livestock grazing, suburban sprawl, and recreational uses (i.e. snowmachining, off road vehicles) may impact the ability of bear populations to persist in an area. More intensive research is required to determine threshold levels at which such impacts become significant as well as possible ways to mitigate adverse human impacts on grizzly bear populations. Similarly, it is important to find ways to identify threshold levels of tolerance for adverse impacts of grizzly bears on humans. Additional research on genetic conservation, deterrent/repellants, and conflict management would also be helpful.

Efforts to restore grizzly bears also require better information on economic and ecological costs and benefits of bears and social attitudes towards bears. Among other reasons, such information is needed to demonstrate the value of preserving wildlife movement and access to habitats.

H. COSTS AND FUNDING

FWP believes that the key to successful implementation of these programs is the establishment of dependable long-term funding. FWP's goal is to seek adequate funding from a diversity of sources to enable the program to be implemented. Preferred approaches include:

- License revenue will be used to partially fund these programs as well as federal Pittman-Robertson funds from excise taxes on firearms and ammunition.
- FWP will seek significant additional federal funding for and develop an MOU with federal agencies to contribute funding support and involvement with habitat and population monitoring within the recovery zones, as directed by a Conservation Strategy or similar document, and on federal lands outside the recovery zones.
- FWP will explore avenues to encourage recreationists to participate in program funding.
- FWP will continue to work to find ways for national interests in this species to be reflected in long-term funding commitments, i.e., a national endowment, Congressional act, or other mechanisms.
- While cost of the program will initially increase over current levels, these costs should stabilize or even decrease over time as the species is managed as one component of our overall wildlife program.
- FWP will explore development of a grizzly bear specialty license plate as an additional source of funding.

Each year FWP spends approximately \$400,000 on grizzly bear management programs in western Montana (Table 8). These funds are used primarily to monitor and manage population status, distribution, conflict, and mortality within the state. As grizzly bear numbers and their distribution increase so too will management costs.

Table 8. FWP western Montana grizzly bear management plan expenses.

Expense	Current Expenditures	Additional Funding Needs
Human-Bear Conflict (includes: wildlife specialists, bear dog contract, preventative measures, wardens, biologists, and staff time)	198,000	138,000
Western Montana grizzly bear population trend and habitat monitoring program.	250,000	360,000
Cabinet-Yaak grizzly enhancement specialist (2 positions)		200,000
Augmentation of the Cabinet/Yaak		100,000
Outreach (conservation education, news releases, etc.)	40,000	60,000
Additional enforcement (including new position in Cabinet/Yaak)		150,000
Admin (statewide program administrative costs)	20,000	20,000
Total	508,000	1,028,000

While future costs are difficult to estimate, particularly in light of the fact that expansion may not be limited in the near future, FWP acknowledges that existing financial resources are not adequate. The costs associated with data collection and conflict management will certainly exceed funds currently available. As a result, the grizzly program will not be self-sufficient and will likely always rely on existing funding sources to a large extent. This is not unusual as the costs associated with managing most big and small game, as well as fisheries, programs typically exceed revenues from license sales.

As is the case with any other managed species, adequate management of grizzly bears should take place wherever they are allowed to reoccupy. Moreover, the grizzly bear is a species of national interest. FWP will continue to pursue some form of a national endowment with funds generated from Congress. Interest from the endowment would be used to offset the costs of managing the grizzly bear in western Montana, especially inside the recovery zones. This would truly empower all state and federal agencies with the ability to more effectively manage this species.

FWP will also seek implementation of expanded funding sources such as those appropriated for State Wildlife Grants since 2001. These are considered in Congress each year. In addition, the states of Montana, Idaho and Wyoming are still investigating the idea of a grizzly bear/gray wolf trust fund that could be created through a special federal appropriation to fund the conservation and management of these two species of national significance. Regardless of the source, the key to successful implementation of these programs is the establishment of dependable long-term funding.

Alternatives Considered

1. *This program should be solely contingent on increases in federal funding.*

Our experience indicates that a solid state-funding base is a key component in long-term success. The estimated costs for implementing this plan are presented above (see Table 8). This is not intended to be a detailed description of program costs, but it does provide an idea of current and anticipated expenses. Annual budgets are impacted by both federal and state processes, and these can impact funding and priorities.

I. EXPANDED LOCAL INVOLVEMENT

Implementing successful long-term wildlife programs requires the support of local communities that share the land with these species and are therefore most affected by ensuing management decisions. By actively involving local communities and inviting their participation, FWP's goal is to develop an integrated grizzly bear program that incorporates local knowledge and site-specific solutions to promoting the recovery process. Accordingly FWP's preferred approaches include the following:

- On approval of this plan, FWP will conduct town meetings in western Montana as the first step in explaining the programs and cultivating local interest.
- FWP will explore opportunities to form or support local work groups in Libby, Seeley/Swan, Thompson Falls, Hamilton, Choteau, Ovando, and Kalispell. If needed, additional groups may be created in other areas. Existing groups with interests in these issues could also be identified and contacted. For example, the Blackfoot Challenge, North Fork Interlocal, Cabinet/Yaak Citizen's Group, and Nine Mile Wildlife Movement Group have all expressed interest.
- If local interest groups are established, the area biologist will coordinate with them and plan to attend at least one annual meeting to address grizzly bear management concerns. This would also provide a forum for sharing information on current grizzly bear science, population status, and management approaches with local residents.
- FWP anticipates that over time, such meetings will provide local residents with an opportunity to discuss and anticipate conflicts, prepare for them, and develop innovative approaches to try and prevent them.
- With the input of local residents and other interests, and through the programs adaptive management framework, over time experience and knowledge will accumulate. Outcomes can be evaluated and policy changes made if, and when, needed.

Montana's intent, through such efforts, is to increase local participation in program development and long-term local ownership of bear conservation programs.

- Local work groups would act in an advisory role, and partner with FWP. The purpose is to share information, generate citizen recommendations for resolving human/bear conflicts, and increase tolerance for bears. Work groups should include agriculture, conservation, sportsmen, land management agency, and community business representation and should coordinate across state and provincial boundaries where appropriate.
- Sanitation in rural communities that lie within occupied bear habitat is an ongoing issue and efforts to address it continue in Whitefish, Seeley Lake and other areas. Efforts require strong citizen involvement and FWP envisions a cooperative endeavor between FWP, local citizens, county commissioners, private interest groups and garbage haulers to solve sanitation problems. Some of this is already occurring.
- FWP will seek to develop a MOU between counties and cities with bear resistant garbage ordinances to enhance enforcement effectiveness at the state, county, and community level.
- FWP has programs to address issues with urban wildlife, including bears. In some cases, groups have been established to address such issues and funding is available to support their efforts.
- FWP recognizes that there is a national interest in the long-term conservation of this species. As such, Montana anticipates providing opportunities for those representing that interest to be involved as this program is developed and implemented. Any local meetings will be open to the public and opportunities will be provided for others to share their perspectives and contributions to program

success. Interested parties can and do also participate in the national processes which affect federal lands and programs.